# TOSHIBA
# Satellite T130/T110
# Satellite Pro T130/T110
# PORTEGE T130/T110
# Portable Personal Computer
User's Manual

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*TOSHIBA Satellite T130/T110, Satellite Pro T130/T110, PORTEGE T130/T110 Series Portable Personal Computer User's Manual*

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# Safety Instructions

Use the following safety guidelines to help protect yourself and your computer.

# When Using Your Computer

*Do not operate your portable computer for an extended period of time with the base resting directly on your body. With extended operation, heat can potentially build up in the base. Allowing sustained contact with the skin could cause discomfort or, eventually, a burn.*

- Do not attempt to service the computer yourself. Always follow installation instructions closely.
- Do not carry a battery in your pocket, purse, or other container where metal objects (such as car keys) could short-circuit the battery terminals. The resulting excessive current follow can cause extremely high temperatures and may result in damage from burns.
- Be sure that nothing rests on your AC adaptor's power cable and that the cable is not located where it can be tripped over or stepped on.
- Place the AC adaptor in a ventilated area, such as a desk top or on the floor, when you use it to run the computer or to charge the battery. Do not cover the AC adaptor with papers or other items that will reduce cooling; also, do not use the AC adaptor while it is inside a carrying case.
- Use only the AC adaptor and batteries that are approved for use with this computer. Use of another type of battery or AC adaptor may risk fire or explosion.
- Before you connect the computer to a power source, ensure that the voltage rating of the AC adaptor matches that of the available power source. 115 V/ 60 Hz in most of North and South America and some Far Eastern countries such as Taiwan. 100 V/50 Hz in eastern Japan and 100 V/60 Hz in western Japan. 230 V/50 Hz in most of Europe, the Middle East, and the Far East.
- If you use an extension cable with your AC adaptor, ensure that the total ampere rating of the products plugged in to the extension cable does not exceed the ampere rating of the extension cable.
- To remove power from the computer, turn it off, disconnect the AC adaptor from the electrical outlet, and remove the battery.
- To help avoid the potential hazard of electric shock, do not connect or disconnect any cables or perform maintenance or reconfiguration of this product during and electrical storm.
- When setting up the computer for work, place it on a level surface.

# FCC information

## FCC notice "Declaration of Conformity Information"

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

*Only peripherals complying with the FCC class B limits may be attached to this equipment. Operation with non-compliant peripherals or peripherals not recommended by TOSHIBA is likely to result in interference to radio and TV reception. Shielded cables must be used between the external devices and the computer's external monitor port, USB port, serial port, parallel port, PS/2 mouse/keyboard port and microphone jack. Changes or modifications made to this equipment, not expressly approved by TOSHIBA or parties authorized by TOSHIBA could void the user's authority to operate the equipment.*

## FCC conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

## Contact

Address: TOSHIBA America Information Systems, Inc.
9740 Irvine Boulevard
Irvine, California 92618-1697

Telephone: (949) 583-3000

# EU Declaration of Conformity

TOSHIBA declares that this product conforms to the following Standards:

| | |
|---|---|
| Supplementary Information: | "The product complies with the requirements of the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC and/or the R&TTE Directive 1999/5/EC." |

This product is carrying the CE-Mark in accordance with the related European Directives. Responsible for CE-Marking is TOSHIBA Europe, Hammfelddamm 8, 41460 Neuss, Germany.

*Regulatory and agency labels may be located computer bottom or under battery.*

# VCCI Class B Information

この装置は、クラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをしてください。 VCCI-B

# Following information is only valid for EU-member States:

## Disposal of products

The crossed out wheeled dust bin symbol indicates that products must be collected and disposed of separately from household waste. Integrated batteries and accumulators can be disposed of with the product. They will be separated at the recycling centres.

The black bar indicates that the product was placed on the market after August 13, 2005.

By participating in separate collection of products and batteries, you will help to assure the proper disposal of products and batteries and thus help to prevent potential negative consequences for the environment and human health.

For more detailed information about the collection and recycling programmes available in your country, please visit our website (http://eu.computers.toshiba-europe.com) or contact your local city office or the shop where you purchased the product.

## Disposal of batteries and/or accumulators

The crossed out wheeled dust bin symbol indicates that batteries and/or accumulators must be collected and disposed of separately from household waste.

If the battery or accumulator contains more than the specified values of lead (Pb), mercury (Hg), and/or cadmium (Cd) defined in the Battery Directive (2006/66/EC), then the chemical symbols for lead (Pb), mercury (Hg) and/or cadmium (Cd) will appear below the crossed out wheeled dust bin symbol.

By participating in separate collection of batteries, you will help to assure the proper disposal of products and batteries and thus help to prevent potential negative consequences for the environment and human health.

For more detailed information about the collection and recycling programmes available in your country, please visit our website (http://eu.computers.toshiba-europe.com) or contact your local city office or the shop where you purchased the product.

*These symbols may not stick depending on the country and region where you purchased.*

# ENERGY STAR® Program

Your computer model may be ENERGY STAR® Compliant. If the model you purchased is compliant, it is labeled with the ENERGY STAR logo on the computer and the following information applies. TOSHIBA. is a partner in the Environmental Protection Agency's (EPA) ENERGY STAR Program and has designed this computer to meet the latest ENERGY STAR guidelines for energy efficiency. Your computer ships with the power management options preset to a configuration that will provide the most stable operating environment and optimum system performance for both AC power and battery modes.

To conserve energy, your computer is set to enter the low-power Sleep Mode which shuts down the system and display within 15 minutes of inactivity in AC power mode. We recommend that you leave this and other energy saving features active, so that your computer will operate at its maximum energy efficiency. You can wake the computer from Sleep Mode by pressing the power button.

According to the EPA, a computer meeting the new ENERGY STAR specifications will use between 20% and 50% less energy depending on how it is used. If all U.S. household and businesses replaced old computers with new ENERGY STAR qualified models, we would save more than $1.8 billion in energy costs over the next five years and avoid greenhouse gas emissions equivalent to more than 2.7 million cars.

If every computer purchased by businesses next year met the new ENERGY STAR requirements, businesses would save more than $210 million over the lifetime of those models. That is equivalent to lighting 120 million square feet of U.S. commercial building space each year.

Visit http://www.energystar.gov or http://www.energystar.gov/power management for more information regarding the ENERGY STAR Program.

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- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.
- Use only the power cord indicated in this manual.
- Replace only with the same or equivalent type battery recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

*Use only the battery pack that came with the computer or an optional battery pack. Use of wrong battery could damage your computer.*

TOSHIBA assumes no liability for any damage in such case.

# General Precautions

TOSHIBA computers are designed to optimize safety, minimize strain and withstand the rigors of portability. However, certain precautions should be observed to further reduce the risk of personal injury or damage to the computer.

Be certain to read the general precautions below and to note the cautions included in the text of the manual.

## Provide adequate ventilation

- Always make sure your computer and AC adaptor have adequate ventilation and are protected from overheating when the power is turned on or when an AC adaptor is connected to a power outlet (even if your computer is in Sleep Mode). In this condition, observe the following:
  - Never cover your computer or AC adaptor with any object.
  - Never place your computer or AC adaptor near a heat source, such as anelectric blanket or heater.
  - Never cover or block the air vents including those located at the base of the computer.
  - Always operate your computer on a hard flat surface. Using your computer on a carpet or other soft material can block the vents.
- Always provide sufficient space around the computer.
- Overheating your computer or AC adaptor could cause system failure, computer or AC adaptor damage or a fire, possibly resulting in serious injury.

## Creating a computer-friendly environment

Place the computer on a flat surface that is large enough for the computer and any other items you are using, such as a printer.

Leave enough space around the computer and other equipment to provide adequate ventilation. Otherwise, they may overheat.

To keep your computer in prime operating condition, protect your work area from:

- Dust, moisture, and direct sunlight.
- Equipment that generates a strong electromagnetic field, such as stereo speakers (other than speakers that are connected to the computer) or speakerphones.
- Rapid changes in temperature or humidity and sources of temperature change such as air conditioner vents or heaters.
- Extreme heat, cold, or humidity.
- Liquids and corrosive chemicals.

## Stress injury

Carefully read the *Instruction Manual for Safety and Comfort*. It contains information on the prevention of stress injuries to your hands and wrists that can be caused by extensive keyboard use. *Instruction Manual for Safety and Comfort*, also includes information on work space design, posture and lighting that can help reduce physical stress.

## Heat injury

- Avoid prolonged physical contact with the computer. If the computer is used for long periods, its surface can become very warm. While the temperature will not feel hot to the touch, if you maintain physical contact with the computer for a long time, for example if you rest the computer on your lap or if you keep your hands on the palm rest, your skin might suffer a low-heat injury.
- If the computer has been used for a long time, avoid direct contact with the metal plate supporting the various interface ports as this can become hot.
- The surface of the AC adaptor can become hot when in use but this condition does not indicate a malfunction. If you need to transport the AC adaptor, you should disconnect it and let it cool before moving it.
- Do not lay the AC adaptor on a material that is sensitive to heat as the material could become damaged.

## Pressure or impact damage

Do not apply heavy pressure to the computer or subject it to any form of strong impact as this can damage the computer's components or otherwise cause it to malfunction.

## Mobile phones

Please be aware that the use of mobile phones can interfere with the audio system. The operation of the computer will not be impaired in any way, but it is recommended that a minimum distance of 30cm is maintained between the computer and a mobile phone that is in use.

## Instruction Manual for Safety and Comfort

All important information on the safe and proper use of this computer is described in the enclosed Instruction Manual for Safety and Comfort. Be sure to read it before using the computer.

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# Preface

Congratulations on your purchase of the TOSHIBA Satellite T130/T110, Satellite Pro T130/T110, PORTEGE T130/T110 Series computer. This powerful notebook computer provides excellent expansion capability, including multimedia devices, and it is designed to provide years of reliable, high-performance computing.

This manual tells you how to set up and begin using your TOSHIBA Satellite T130/T110, Satellite Pro T130/T110, PORTEGE T130/T110 Series computer. It also provides detailed information on configuring your computer, basic operations and care, using optional devices and troubleshooting.

If you are a new user of computers or if you're new to portable computing, first read over the *Introduction* and *The Grand Tour* chapters to familiarize yourself with the computer's features, components and accessory devices. Then read *Getting Started* for step-by-step instructions on setting up your computer.

If you are an experienced computer user, please continue reading the preface to learn how this manual is organized, then become acquainted with this manual by browsing through its pages. Be sure to look over the *Specifications* section of the Introduction, to learn about features that are uncommon or unique to the computer. If you are going to install Memory cards or connect external devices such as a monitor, be sure to read Chapter 8, *Optional Devices*.

## Manual contents

This manual is composed of the following nine chapters, five appendixes, a glossary and an index.

Chapter 1, *Introduction*, is an overview of the computer's features, capabilities, and options.

Chapter 2, *The Grand Tour*, identifies the components of the computer and briefly explains how they function.

Chapter 3, *Getting Started*, provides a quick overview of how to begin operating your computer and gives tips on safety and designing your work area.

Chapter 4, *Operating Basics*, includes instructions on using the following devices: Touch Pad, Sound System, wireless communication and LAN. It also provides tips on care of the computer, and CD/DVDs.

Chapter 5, *The Keyboard*, describes special keyboard functions including the keypad overlay and hot keys.

Chapter 6, *Power and Power-Up Modes*, gives details on the computer's power resources and battery save modes.

Chapter 7, *HW Setup* explains how to configure the computer using the HW Setup program.

Chapter 8, *Optional Devices*, describes the optional hardware available.

Chapter 9, *Troubleshooting*, provides helpful information on how to perform some diagnostic tests, and suggests courses of action if the computer doesn't seem to be working properly.

The *Appendices* provide technical information about your computer.

The *Glossary* defines general computer terminology and includes a list of acronyms used in the text.

The *Index* quickly directs you to the information contained in this manual.

# Conventions

This manual uses the following formats to describe, identify, and highlight terms and operating procedures.

## Abbreviations

On first appearance, and whenever necessary for clarity, abbreviations are enclosed in parenthesis following their definition. For example: Read Only Memory (ROM). Acronyms are also defined in the Glossary.

## Icons

Icons identify ports, dials, and other parts of your computer. The indicator panel also uses icons to identify the components it is providing information on.

## Keys

The keyboard keys are used in the text to describe many computer operations. A distinctive typeface identifies the key top symbols as they appear on the keyboard. For example, **Enter** identifies the ENTER key.

## Key operation

Some operations require you to simultaneously use two or more keys. We identify such operations by the key top symbols separated by a plus sign (**+**). For example, **CTRL + C** means you must hold down **CTRL** and at the same time press **C**. If three keys are used, hold down the first two and at the same time press the third.

| | |
|---|---|
| **ABC** | When procedures require an action such as clicking an icon or entering text, the icon's name or the text you are to type in is represented in the type face you see to the left. |

## Display

| | |
|---|---|
| ABC | Names of windows or icons or text generated by the computer that appears on its display screen is presented in the type face you see to the left. |

## Messages

Messages are used in this manual to bring important information to your attention. Each type of message is identified as shown below.

*Pay attention! A caution informs you that improper use of equipment or failure to follow instructions may cause data loss or damage your equipment.*

*Please read. A note is a hint or advice that helps you make best use of your equipment.*

*Indicates a potentially hazardous situation, which could result in death or serious injury, if you do not follow instructions.*

## Terminology

This term is defined in this document as follows:

| | |
|---|---|
| **Start** | The word "**Start**" refers to the " " button in Windows® 7. |

# Chapter 1

# Introduction

This chapter provides an equipment checklist, and it identifies the computer's features, options and accessories.

*Some of the features described in this manual may not function properly if you use an operating system that was not pre-installed by TOSHIBA.*

## Equipment checklist

Carefully unpack your computer. Save the box and packing materials for future use.

### Hardware

Check to make sure you have all the following items:

- TOSHIBA Satellite T130/T110, Satellite Pro T130/T110, PORTEGE T130/T110 Series Portable Personal Computer
- Universal AC adaptor and power cord (2-pin plug or 3-pin plug)
- Battery pack (installed in the computer)

# Software

## Windows® 7

The following software is preinstalled:

- Windows® 7
- Microsoft Internet Explorer
- TOSHIBA Value Added Package
- TOSHIBA Hardware Setup
- TOSHIBA Supervisor Password
- TOSHIBA Assist
- TOSHIBA ConfigFree™
- TOSHIBA SD Memory Utilites
- TOSHIBA Disc Creator
- TOSHIBA eco Utility
- Online Manual (This manual)

Other software may be preinstalled dependant on the model purchased.

## Documentation

- Satellite T130/T110, Satellite Pro T130/T110, PORTEGE T130/T110 Series Personal Computer User Information Guide
- Instruction Manual for Safety and Comfort

*If any of the items are missing or damaged, contact your dealer immediately.*

# Features

This section describes the hardware of your computer.

The actual specifications may vary depending on the model you purchased.

## Processor

| | |
|---|---|
| **CPU** | Your computer is equipped with one processor and processor type varies depending on model. To check which type of processor is included in your model, open the TOSHIBA PC Diagnostic Tool Utility by clicking **Start** → **All Programs** → **TOSHIBA** → **Utilities** → **PC Diagnostic Tool**. |

### Legal Footnote (CPU)*2

For more information on the CPU, please refer to the Legal Footnotes section in Appendix F or click the *2 above.

| | |
|---|---|
| **Chipset** | Mobile Intel® GS45/GS40 Express Chipset |

## Memory

| | |
|---|---|
| **Slots** | 1, 2 or 4GB* memory modules can be installed in the computer's two memory slots.<br>The actual amount of useable system memory will be less than the installed memory modules.<br>Maximum system memory size:<br>8GB(4GBx2) for GS45 chipset models.<br>4GB(2GBx2) for GS40 chipset models.<br>* 4GB memory modules cannot be installed in GS40 chipset models. |

*Please visit your region's web site or refer to the catalog for the configuration details of the model that you have purchased.*

| | |
|---|---|
| **Main Memory Disclaimer** | Part of the main system memory may be used by the graphics system for graphics performance and therefore reduce the amount of main system memory available for other computing activities. The amount of main system memory allocated to support graphics may vary depending on the graphics system, applications utilized, system memory size and other factors. Computers configured with a 32-bit operating system can address up to 3GB of system memory. Only computers configured with a 64-bit operating system can address 4GB or more of system memory. |
| **Video RAM** | Video RAM capacity shares with main memory, and the proportion depends on Dynamic Video Memory Technology. |

### *Legal Footnote (Memory (Main System))*3*

For more information regarding Memory (Main System), please refer to the Legal Footnotes section in Appendix F or click the *3 above.

## *Power*

| | |
|---|---|
| **Battery Pack** | Your computer is powered by a rechargeable lithium-ion battery pack. |

### *Legal Footnote (Battery Life)*4*

For more information regarding Battery Life, please refer to the Legal Footnotes section in Appendix F or click the *4 above.

| | |
|---|---|
| **RTC Battery** | The internal RTC battery backs up the Real Time Clock(RTC) and calendar. |
| **AC Adaptor** | The AC adaptor provides power to the system and recharges the batteries when they are low. It comes with a detachable power cord which will either have a 2-pin or 3-pin plug enclosure.<br>As the AC adaptor is universal, it can receive a range of AC voltages from 100 to 240 volts, however you should note that the output current varies among different models. Using the wrong adaptor can damage your computer. Refer to the *AC adaptor* section in Chapter 2, *The Grand Tour*. |

## Disks

| | |
|---|---|
| **Hard disk Disclaimer** | 1 Gigabyte (GB) means $10^9$ = 1,000,000,000 bytes using powers of 10. The computer operating system, however, reports storage capacity using powers of 2 for the definition of 1 GB = $2^{30}$ = 1,073,741,824 bytes, and therefore shows less storage capacity. Available storage capacity will also be less if the product includes one or more pre-installed operating systems, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity may vary. |
| **Hard disk Drive** | This computer is equipped with one of the following hard disk drive (HDD) types. The capacity of each hard disk drive model is different.<br>■ 250GB<br>■ 320GB<br>■ 400GB<br>■ 500GB<br>Please note that part of the hard disk drives overall capacity is reserved as administration space. Additional Hard Disk drive sizes may be introduced. |

### Legal Footnote (Hard Disk Drive (HDD) Capacity)*5

For more information regarding Hard Disk Drive (HDD) Capacity, please refer to the Legal Footnotes section in Appendix F or click the *5 above.

## Display

The computer's LCD panel supports high-resolution video graphics. The screen can be set at a wide range of viewing angles for maximum comfort and readability.

| | |
|---|---|
| **Built-In** | 13.3" or 11.6" WXGA 16 M colors, with the following resolution:<br>1366 horizontal × 768 vertical pixels. |

### Legal Footnote (LCD)*6

For more information regarding the LCD, please refer to the Legal Footnotes section in Appendix F or click the *6 above.

| | |
|---|---|
| **Graphics Controller** | Graphics controller maximizes display performance. Refer to *Display Controller* section in Appendix B, *Display Controller* for more information. |

### *Legal Footnote (Graphics Processor Unit ("GPU"))**7

For more information regarding the Graphics Processor Unit ("GPU"), please refer to the Legal Footnotes section in Appendix F or click the *7 above.

## *Keyboard*

| | |
|---|---|
| **Built-In** | The internal keyboard provides the embedded numeric overlay keys, dedicated cursor control overlay keys, and and Keys.<br>The keyboard is compatible with the IBM® enhanced keyboard. Refer to Chapter 5, *The Keyboard*, for details. |

## *Pointing Device*

| | |
|---|---|
| **Built-In Touch Pad** | A Touch Pad and control buttons in the palm rest enable control of the on-screen pointer and scrolling of windows. |

## *Ports*

| | |
|---|---|
| **HDMI out port** | This HDMI out port allows you to connect external display/audio devices. (Provided with some models) |
| **External Monitor** | This 15-pin port lets you connect an external video display. |
| **Universal Serial Bus (USB 2.0)** | The computer supports multiple Universal Serial Bus ports that comply with the USB 2.0 standard.<br>The port with the ( ) has a USB Sleep and Charge function. |

## Slots

| | |
|---|---|
| **Bridge Media Slot** | This slot lets you insert an SD™/SDHC™ memory card, Memory Stick™(PRO™/PRO Duo™ ), xD-Picture Card™, and MultiMediaCard™. |

## Multimedia

| | |
|---|---|
| **Web Camera** | Record/Send still or video images with this integrated Web Camera. |
| **Sound System** | The integrated sound system provides support for the computer's internal speakers and microphone, as allowing an external microphone and headphones to be connected via the appropriate jacks. |
| **Headphone jack** | A 3.5 mm mini headphone jack enables connection of stereo headphones. |
| **Microphone Jack** | A 3.5 mm mini microphone jack enables connection of a three-conductor mini jack for monaural microphone input. |

## Communications

| | |
|---|---|
| **LAN** | The computer has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T) and Fast Ethernet LAN (100 megabits per second, 100BASE-TX). |
| **Wireless LAN** | The Wireless LAN feature is not available on all models. Where present, it supports the b,g standards and n* draft2.0 but it is compatible with other LAN systems based on Direct Sequence Spread Spectrum / Orthogonal Frequency Division Multiplexing radio technology that complies with the IEEE 802.11 Standard.<br>* Depends on the installed Wireless LAN module.<br>■ Roaming over multiple channels<br>■ Card Power Management<br>■ Wired Equivalent Privacy (WEP) data encryption, based on 128 bit encryption algorithm.<br>■ Advanced Encryption Standard (AES) data encryption, based on 256 bit encryption algorithm. |

- *The transmission speed over the wireless LAN, and the distance over which the wireless LAN can reach, may vary depending on surrounding electromagnetic environment, obstacles, access point design and configuration, client design and software/hardware configurations. The transmission rate described is the theoretical maximum speed as specified under the appropriate standard - the actual transmission speed will be lower than the theoretical maximum speed.*
- *To enable or disable wireless communication, use the Hot Key FN+F8. For more information see the Hot keys section in Chapter 5.*

### *Legal Footnote (Wireless LAN)*8*

For more information regarding Wireless LAN, please refer to the Legal Footnotes section in Appendix F or click the *8 above.

| | |
|---|---|
| **Bluetooth** | Some models are equipped with Bluetooth wireless communication function which eliminates the need for cables between electronic devices such as computers and printers and mobile phones. When it is enabled, Bluetooth provides the wireless personal area network environment which is safe and trustworthy, that is quick and easy. |

## *Security*

| | |
|---|---|
| **Security lock slot** | Connects an optional security lock to anchor the computer to a desk or other large object. |
| **Password** | Power-on password protection<br>Two level password architecture<br>HDD password protection |

# Special features

The following features are either unique to TOSHIBA computers or are advanced features, which make the computer more convenient to use.

| | |
|---|---|
| **Hot Keys** | Key combinations let you quickly modify the system configuration directly from the keyboard without running a system configuration program. |
| **Keypad Overlay** | A ten-key pad is integrated into the keyboard. Refer to the *Keypad overlay* section in Chapter 5, The Keyboard, for instructions on using the keypad overlay. |
| **Instant Security** | A specific hot key function automatically locks the system providing data security. |
| **Display Automatic Power Off** *1 | This feature automatically cuts off power to the internal display when there is no keyboard input for a specified time. Power is restored when any key is pressed.<br>This can be specified in the Power Options. |
| **HDD Automatic Power Off** *1 | This feature automatically cuts off power to the hard disc drive when it is not accessed for a specified time. Power is restored when the hard disc is accessed.<br>This can be specified in the Power Options. |
| **System Automatic Sleep Mode/ Hibernation** *1 | This feature automatically shuts down the system into Sleep Mode or Hibernation Mode when there is no input or hardware access for a specified time.<br>This can be specified in the Power Options. |
| **Intelligent Power Supply** *1 | A microprocessor in the computer's intelligent power supply detects the battery's charge and calculates the remaining battery capacity. It also protects electronic components from abnormal conditions, such as voltage overload from an AC adaptor.<br>This can be specified in the Power Options. |
| **Battery Save Mode** *1 | This feature lets you configure the computer in order to save battery power. This can be specified in the Power Options. |
| **Panel Power On/Off** *1 | This feature turns power to the computer off when the display panel is closed and turns it back on when the panel is opened.<br>This can be specified in the Power Options. |

| | |
|---|---|
| **Low Battery Automatic Hibernation** *1 | When battery power is exhausted to the point that computer operation cannot be continued, the system automatically enters Hibernation Mode and shuts down.<br>This can be specified in the Power Options. |
| **TOSHIBA HDD Protection** | This feature uses the acceleration sensor built in the computer to detect vibration, falls and shocks, and automatically moves the hard disk drive's read/write head to a safe position in order to reduce the risk of damage that could be caused by head-to-disk contact. Refer to the *Using the Hard Disk Drive (HDD) Protection* section in Chapter 4, *Operating Basics*, for more details. |

*The TOSHIBA HDD Protection function does not guarantee that the hard disk drive will not be damaged.*

| | |
|---|---|
| **Hibernation Mode** | This feature lets you turn off the power without exiting from your software. The contents of main memory are saved to the hard disk so that when you turn on the power again, you can continue working right where you left off. Refer to the *Turning off the power* section in Chapter 3, *Getting Started*, for details. |
| **Sleep Mode** | If you have to interrupt your work, you can turn off the power without exiting from your software. Data is maintained in the computer's main memory so that when you turn on the power again, you can continue working right where you left off. |

**1 Click , **Control Panel**, **System and Security**, and then click **Power Options**.*

# TOSHIBA Value Added Package

This section describes the TOSHIBA Component features pre-installed on the computer.

| | |
|---|---|
| **TOSHIBA Power Saver** | TOSHIBA Power Saver provides you with the features of more various power supply managements. |
| **TOSHIBA Zooming Utility** | This utility allows you to enlarge or reduce the icon size on the Windows Desktop, or the zoom factor associated with specific supported applications. |
| **TOSHIBA PC Diagnostic Tool** | The TOSHIBA PC Diagnostic Tool will display basic system configuration information and allow the functionality of some of the computer's built-in hardware devices to be tested. |
| **TOSHIBA Flash Cards** | This utility supports the following functions.<br>■ Hot key function<br>■ TOSHIBA utility launcher function |
| **TOSHIBA Components Common Driver** | TOSHIBA Components Common Driver contains the module required for the utility which TOSHIBA offers. |
| **TOSHIBA Accessibility** | The TOSHIBA Accessibility utility provides support to movement impaired users when they need to use the TOSHIBA Hot-key functions. In use, the utility allows you to make the **FN** key 'sticky', that is you can press it once, release it, and then press one of the **'F'** keys in order to access its specific function. When set, the **FN** key will remain active until another key is pressed. |

# Utilities and Applications

This section describes pre-installed utilities and tells how to start them. For details on operations, refer to each utility's online manual, help files or readme.txt files.

| | |
|---|---|
| **TOSHIBA Assist** | TOSHIBA Assist is a graphical user interface that provides easy access to help and services. |
| **HW Setup** | This program lets you customize your hardware settings according to the way you work with your computer and the peripherals you use. To start the utility, double click the **TOSHIBA Assist** on your desktop, select **OPTIMIZE** tab, and click **TOSHIBA Hardware Settings**. |
| **Power On Password** | Two levels of password security, supervisor and user, are available to prevent unauthorized access to your computer.<br>To register a supervisor password, double click the **TOSHIBA Assist** on your desktop select the **SECURE** tab and start the **Supervisor password** utility.<br>To set a user password, select the **SECURE** tab on TOSHIBA Assist, then start the **User password** utility. On the **Password** tab you can register a user password. |
| **TOSHIBA Disc Creator** | You can create CD/DVDs in several formats including audio CDs that can be played on a standard stereo CD player and data CDs or DVDs to store multimedia and/or document files on your hard disk drive. This software can be used on a model with the CD-RW/DVD-ROM drive, DVD-R/-RW drive, DVD+_R/+_RW drive and DVD Super Multi drive.<br>To run TOSHIBA Disc Creator, click , select **All Programs**, **TOSHIBA**, **CD&DVD Applications**, and then click **Disc Creator**. |
| **TOSHIBA ConfigFree** | ConfigFree is a suite of utilities to allow easy control of communication devices and network connections. ConfigFree also allows you to find communication problems and create profiles for easy switching between location and communication networks.<br>To run ConfigFree, click , select **All Programs**, **TOSHIBA**, and then click **ConfigFree**. |

| | |
|---|---|
| **TOSHIBA Face Recognition.** | TOSHIBA Face Recognition uses a face verification library to verify the face data of users when they log in to Windows. If the verification is successful, the user will be logged into Windows automatically. The user can thus avoid having to enter a password or the like, which makes the login process easier. |
| **TOSHIBA eco Utility** | TOSHIBA eco Utility helps you monitor your power savings by showing approximate real time power consumption. Furthermore, it shows approximate accumulated power consumption and approximate accumulated power savings when using eco mode daily, weekly, and monthly. You can track power savings by using eco mode continuously. |
| **Windows Mobility Center** | Mobility Center is a utility for accessing several settings quickly in one window. A maximum of eight tiles are prepared as the operating system default. Two additional tiles are also added to your Mobility Center.<br>Installing the "TOSHIBA Extended Tiles for Windows Mobility Center" package will add the following functions.<br>■ Lock Computer:<br>Lock your computer without turning it off. This has the same function as **Lock** of the Start menu.<br>■ TOSHIBA Assist:<br>Open the TOSHIBA Assist if it is already installed in your computer. |

# Options

You can add a number of options to make your computer even more powerful and convenient to use. Refer to Chapter 8 *Optional Devices*, for details. The following options are available:

| | |
|---|---|
| **Memory expansion** | Two memory modules can be installed in this computer. |

*Use only PC3-6400(DDR3-800) or its compatible memory modules. See your TOSHIBA dealer for details.*

** The availability of memory depends on the model you purchased.*

| | |
|---|---|
| **Battery pack** | An additional battery pack can be purchased from your TOSHIBA dealer. Use it as a spare to increase your computer operating time. |
| **AC Adaptor** | If you use your computer at more than one site frequently, it may be convenient to purchase an additional AC adaptor for each site so you will not have to carry the adaptor with you. |

# Chapter 2

# The Grand Tour

This chapter identifies the various components of your computer. Become familiar with each component before you operate the computer.

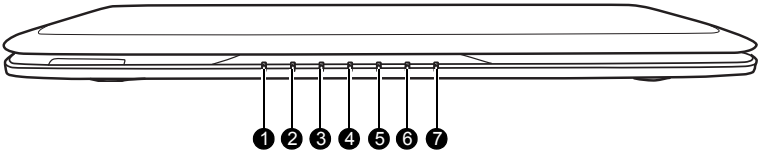
***Legal Footnote (Non-applicable Icons)****1*

For more information regarding Non-applicable Icons, please refer to the Legal Footnotes section in Appendix F or click the *1 above.

*Please handle your computer carefully to avoid scratching or damaging the surface.*

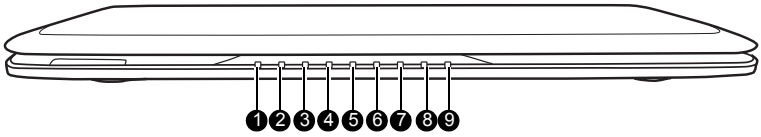
## Front with the display closed

The following figure shows the computer's front with its display panel in the closed position.




1. DC IN LED
2. Power LED
3. Battery LED
4. Disk LED
5. Bridge media slot LED
6. Wireless communication LED
7. Wireless WAN LED

*Front of the computer with display closed (Satellite T130, Satellite Pro T130, PORTEGE T130)*




1. DC IN LED
2. Power LED
3. Battery LED
4. Disk LED
5. Bridge media slot LED
6. Wireless communication LED
7. Wireless WAN LED
8. Arrow Lock
9. Numeric Lock

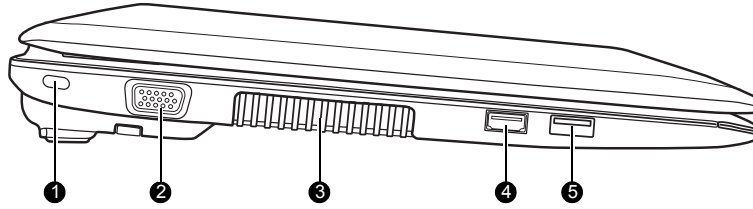
*Front of the computer with display closed (Satellite T110, Satellite Pro T110, PORTEGE T110)*

| | |
|---|---|
| **DC IN LED** | The DC IN LED normally glows green when power is being correctly supplied from the AC power adaptor. |
| **Power LED** | The Power LED glows green when the computer is on. If you select Sleep Mode from Turn Off Computer, this indicator flashes amber (two seconds on, two seconds off) while the computer enters Sleep Mode. |
| **Battery LED** | The Battery LED shows the condition of the battery's charge: Green indicates a full charge, amber indicates that the battery is charging and flashing Amber indicates a low battery charge. Refer to Chapter 6, *Power and Power-Up Modes*. |
| **Disk LED** | The Disk LED glows green whenever the computer is accessing the built-in hard disk drive. |
| **Bridge media slot LED** | The Bridge media slot LED glows green when the computer is accessing the Bridge media slot. |
| **Wireless communication LED** | The Wireless communication LED glows amber when the Wireless LAN and Bluetooth functions are turned on. Only some models are equipped with Wireless LAN and Bluetooth functions. |
| **Wireless WAN LED** | The Wireless WAN LED glows or blinks blue when the Wireless WAN function is on. The LED will glow or blink in order to indicate the connection status of the Wireless WAN function. A Wireless WAN module must be installed to use this function. Some models are equipped with a Wireless WAN module. |

| | |
|---|---|
| **Arrow Lock** | When the Arrow indicator lights green, you can use the dark gray labeled keys on the keypad overlay as cursor keys. |
| **Numeric Lock** | When the Numeric Lock indicator glows green, you can use the dark gray labelled keys on the keypad overlay for numeric input. |

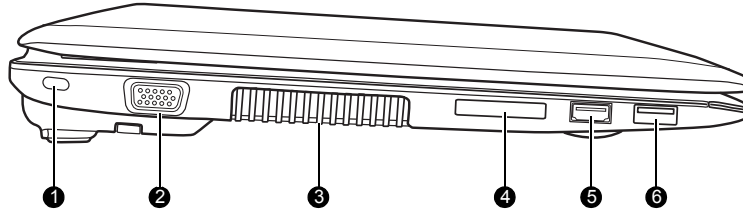
# Left side

The following figure shows the computer's left side.




1. Security Lock
2. External Monitor Port
3. Cooling Vents
4. HDMI out port
5. Universal Serial Bus (USB 2.0) port

*The left side of the computer (Satellite T130, Satellite Pro T130, PORTEGE T130)*




1. Security Lock
2. External Monitor Port
3. Cooling Vents
4. Bridge Media Slot
5. HDMI out port
6. Universal Serial Bus (USB 2.0) port

*The left side of the computer (Satellite T110, Satellite Pro T110, PORTEGE T110)*

| | |
|---|---|
| **Security Lock** | A security cable attaches to this port. The optional security cable anchors your computer to a desk or other large object to deter theft. |

| | |
|---|---|
| **External Monitor Port** | This 15-pin port lets you connect an external video display. |
| **Cooling Vents** | Cooling vents help prevent the CPU from overheating. |

*Do not block the cooling vents. Keep foreign metal objects, such as screws, staples and paper clips, out of the cooling vents. Foreign metal objects can create a short circuit, which can cause damage and fire, possibly resulting in serious injury.*

| | |
|---|---|
| **HDMI out port** | A port enables connection of the application of High Definition Multimedia Interface, such as DVD Player, LCD Monitor, LCD TV, HDTV, Set-top-Box and projector. (Provided with some models) |

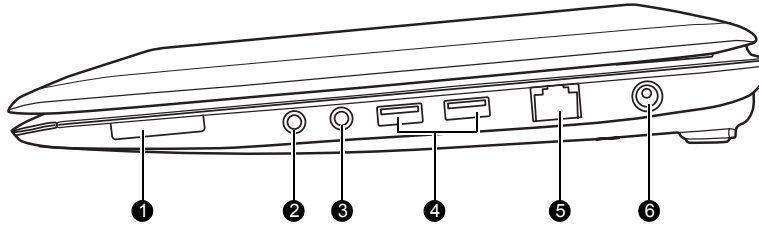
- *When you connect a television or external monitor to the HDMI port and the display output device is set to HDMI. When you unplug the HDMI cable and re-plug it in please wait at least 5 seconds before you replug the HDMI cable again.*
- *When you connect a television or external monitor to the HDMI port and you connect the television, external monitor or external sound device to another port. When you change the display output or Unplug/re-plug the HDMI cable. The sound output device and the display output device maybe changed automatically by the system.*

| | |
|---|---|
| **Universal Serial Bus (USB 2.0) port** | A Universal Serial Bus port is on the left side. The port complies with the USB2.0 standard, Port with the icon have USB Sleep and Charge function. Operation of all functions of all USB devices has not been confirmed. As such, some untested third-party devices may not function properly. |

*Keep foreign metal objects, such as screws, staples and paper clips, out of the USB connectors. Foreign metal objects can create a short circuit, which can cause damage and fire, possibly resulting in serious injury.*

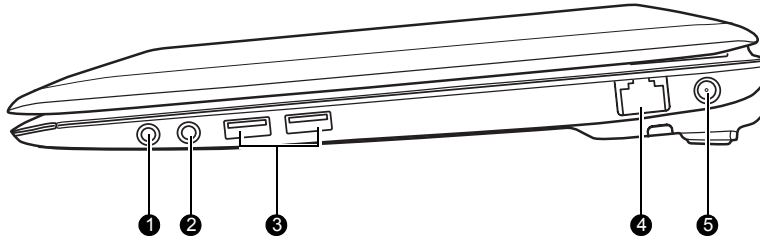
# Right side

The following figure shows the computer's right side.




1. Bridge Media Slot
2. Headphone Jack
3. Microphone Jack
4. Universal Serial Bus (USB 2.0) ports
5. LAN Jack
6. DC IN 19V Jack

*The right side of the computer (Satellite T130, Satellite Pro T130, PORTEGE T130)*




1. Headphone Jack
2. Microphone Jack
3. Universal Serial Bus (USB 2.0) ports
4. LAN Jack
5. DC IN 19V Jack

*The right side of the computer (Satellite T110, Satellite Pro T110, PORTEGE T110)*

**Bridge Media Slot** — Supports SD™/SDHC™ memory card, Memory Stick™(PRO™/PRO Duo™), xD-Picture Card™, and MultiMediaCard™.

*Keep foreign metal objects, such as screws, staples and paper clips, out of the Bridge media slot. Foreign metal objects can create a short circuit, which can cause damage and fire, possibly resulting in serious injury.*

| | |
|---|---|
| **Headphone Jack** | A 3.5 mm mini headphone jack enables connection of stereo headphones. |
| **Microphone Jack** | A 3.5 mm mini microphone jack enables connection of a three-conductor mini jack for monaural microphone input. |
| **Universal Serial Bus (USB 2.0) ports** | Two Universal Serial Bus ports are on the right side. The ports comply with the USB 2.0 standard. Operation of all functions of all USB devices has not been confirmed. As such, some untested third-party devices may not function properly. |

*Keep foreign metal objects, such as screws, staples and paper clips, out of the USB connectors. Foreign metal objects can create a short circuit, which can cause damage and fire, possibly resulting in serious injury.*

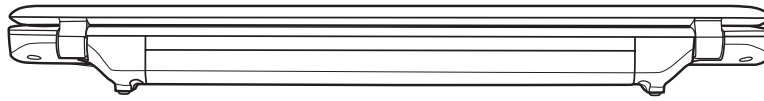
| | |
|---|---|
| **LAN Jack** | This jack lets you connect to a LAN. The adaptor has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T) and Fast Ethernet LAN (100 megabits per second, 100BASE-TX). Refer to Chapter 4, *Operating Basics*, for details. |

- *Do not connect any cable other than a LAN cable to the LAN jack. It could cause damage or malfunction.*
- *Do not connect the LAN cable to a power supply. It could cause damage or malfunction.*

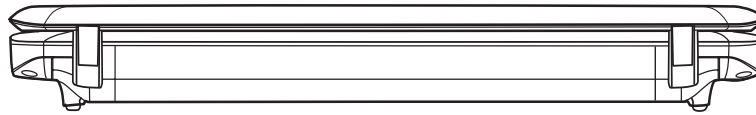
| | |
|---|---|
| **DC IN 19V Jack** | The AC adaptor connects to this jack in order to power the computer and charge its internal batteries. Please note that you should only use the model of AC adaptor supplied with the computer at the time of purchase - using the wrong AC adaptor can cause damage to the computer. |

# Backside

The following figure shows the computer's back panel.



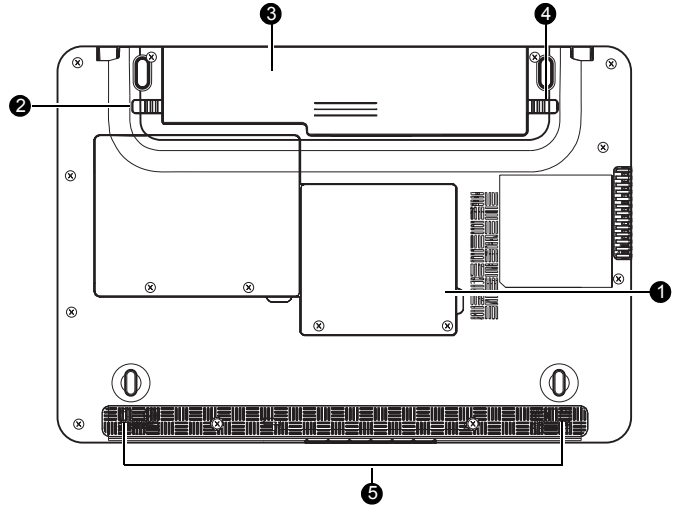
*The backside of the computer (Satellite T130, Satellite Pro T130, PORTEGE T130)*



*The backside of the computer (Satellite T110, Satellite Pro T110, PORTEGE T110)*

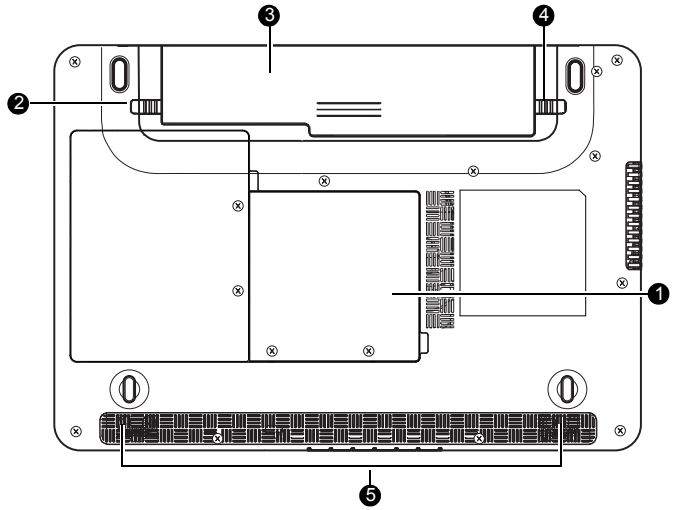
# Underside

The following figure shows the underside of the computer. You should ensure that the display is closed before the computer is turned over to avoid causing any damage.




1. Memory Module Cover
2. Battery Lock
3. Battery Pack
4. Battery Release Latch
5. Speakers

*The underside of the computer (Satellite T130, Satellite Pro T130, PORTEGE T130)*



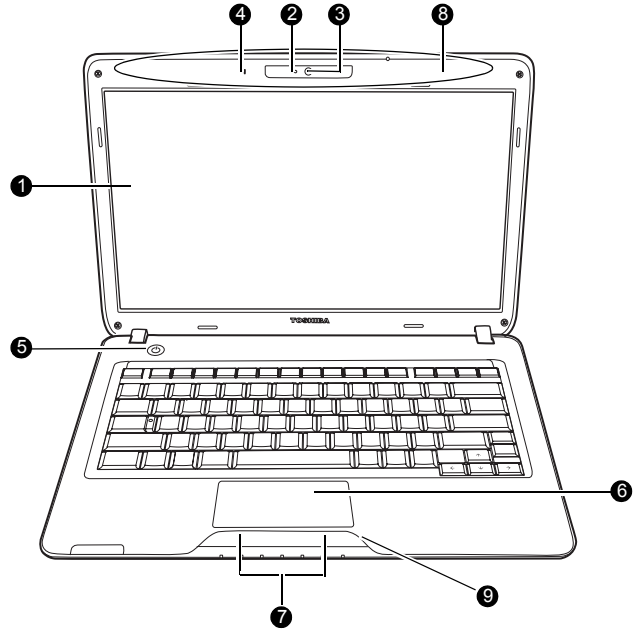

1. Memory Module Cover
2. Battery Lock
3. Battery Pack
4. Battery Release Latch
5. Speakers

*The underside of the computer (Satellite T110, Satellite Pro T110, PORTEGE T110)*

| | |
|---|---|
| **Memory Module Cover** | This cover protects two memory module sockets -- one or two modules are pre-installed. Refer to the *Memory expansion* section in Chapter 8, *Optional Devices*. |
| **Battery Lock** | Slide this lock to prepare the battery pack for removal. |
| **Battery Pack** | The battery pack powers the computer when the AC adaptor is not connected. For detailed information on the battery pack, refer to Chapter 6, *Power and Power-Up Modes*. |
| **Battery Release Latch** | Slide and hold this latch to release the battery pack for removal. For detailed information on removing the battery pack, refer to Chapter 6, *Power and Power-Up Modes*. |
| **Speakers** | The speakers emit sound generated by your software as well as audio alarms, such as low battery condition, generated by the system. |

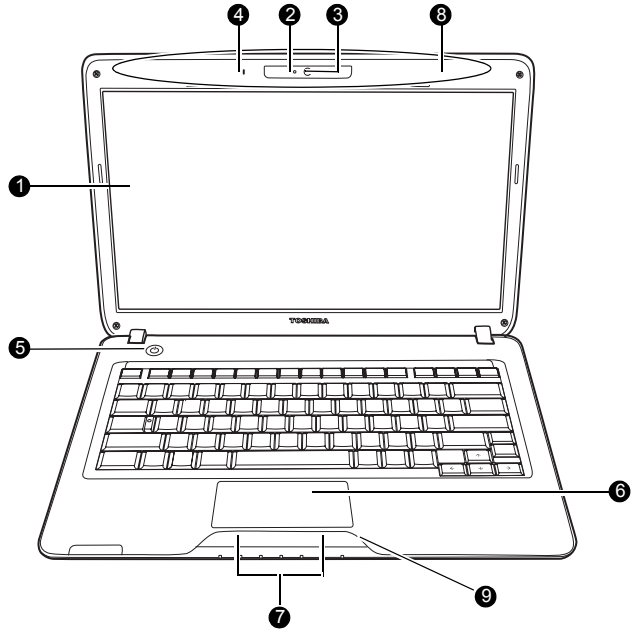
# Front with the display open

This section shows the front of the computer with the display open. Refer to the appropriate illustration for details. To open the display, lift the front of the display. Position the display at a comfortable viewing angle.




1. Display Screen
2. Web Camera LED
3. Web Camera Lens
4. Built-in microphone
5. Power Button
6. Touch Pad
7. Touch Pad control Buttons
8. Wireless LAN/Wireless WAN Antennas (Not shown)
9. LCD Sensor switch (Not Shown)

*The front of the computer with the display open (Satellite T130, Satellite Pro T130, PORTEGE T130)*



1. Display Screen
2. Web Camera LED
3. Web Camera Lens
4. Built-in microphone
5. Power Button
6. Touch Pad
7. Touch Pad control Buttons
8. Wireless LAN/Wireless WAN Antennas (Not shown)
9. LCD Sensor switch (Not Shown)

*The front of the computer with the display open (Satellite T110, Satellite Pro T110, PORTEGE T110)*

| | |
|---|---|
| **Display Screen** | The LCD displays high-contrast text and graphics. Refer to Appendix B, *Display Controller*. When the computer operates on the AC adaptor the display screen's image will be somewhat brighter than when it operates on battery power. The lower brightness level is intended to save battery power. |
| **Web Camera LED** | The Web Camera LED glows when the Web Camera is operating. |
| **Web Camera** | Take your picture or send your image to web contacts. |
| **Built-In Microphone** | A built-in microphone allows you to import and record sounds for your application |

| | |
|---|---|
| **Power Button** | Press this button to turn the computer's power on and off. |
| **LCD Sensor switch** | This switch senses when the display panel is either closed or opened and activates the Panel Power Off/On feature as appropriate. For example, when you close the display panel the computer enters Hibernation Mode and shuts itself down and then, when you next open the display, the computer will automatically start up and return you to the application you were previously working on.<br>You can specify within the Power Options. To access it, click **Start** → **Control Panel** → **System and Security** → **Power Options**. |

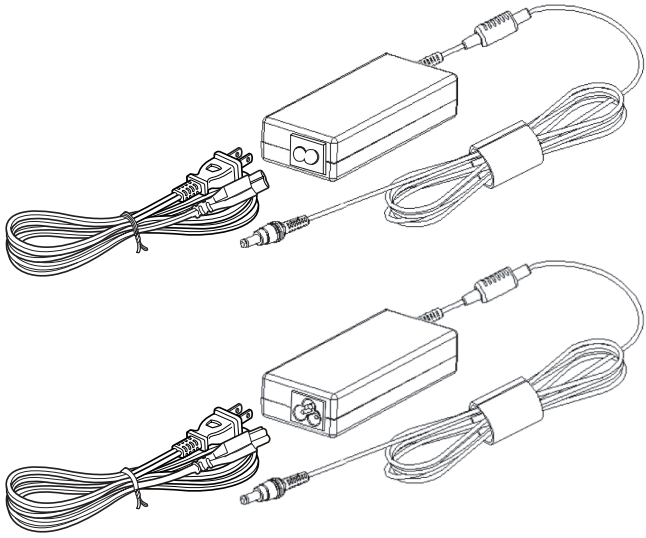
*Do not put any magnetic objects close to this switch as they may cause the computer to automatically enter Hibernation Mode and shut down even if the Panel Power Off feature is disabled.*

| | |
|---|---|
| **Touch Pad** | A Touch Pad located in the centre of the palm rest is used to control the on-screen pointer. |
| **Touch Pad Control Buttons** | These let you select menu items or manipulate text and graphics designated by the on-screen pointer. Refer to the *Using the Touch Pad* section in Chapter 4, *Operating Basics*. |
| **Wireless LAN Antenna** | Some computers in this series are equipped with the Wireless LAN antenna. |
| **Wireless WAN Antenna** | Some computers in this series are equipped with the Wireless WAN antenna. |

# AC adaptor

The AC adaptor converts AC power to DC power and reduces the voltage supplied to the computer. It can automatically adjust to any voltage from 100 to 240 volts and to a frequency of either 50 or 60 hertz, enabling you to use the computer in almost any country/region.

To recharge the battery, simply connect the AC adaptor to a power source and the computer. Refer to Chapter 6, *Power and Power-Up Modes*, for details.



*The AC adaptor*

- *Depending on the model in question, either a 2-pin or 3-pin adaptor/ power lead will be bundled with the computer.*
- *Do not use a 3-pin to 2-pin conversion plug.*
- *The supplied power cord conforms to safety rules and regulations in the region the product is bought and should not be used outside of this region. In order to use the adaptor/computer in other regions, you should please buy a power cord that conforms to the safety rules and regulations in that particular region.*

*Always use the TOSHIBA AC adaptor that was included with your computer, or use AC adaptors specified by TOSHIBA to avoid any risk of fire or other damage to the computer. Use of an incompatible AC adaptor could cause fire or damage to the computer possibly resulting in serious injury. TOSHIBA assumes no liability for any damage caused by use of an incompatible adaptor.*

# Chapter 3

# Getting Started

This chapter provides basic information to get you started using your computer. It covers the following topics:

*Be sure also to read the Instruction Manual for Safety and Comfort. This guide, which is included with the computer, explains product liability.*

- Connecting the AC adaptor
- Opening the display
- Turning on the power
- Windows® 7 setup
- Turning off the power
- Restarting the computer
- System Recovery Options
- Create Optical Recovery Media
- Restoring the preinstalled Software from the Recovery HDD
- Restoring the Preinstalled Software from Recovery Media

*All users should be sure to read the section Windows® 7 setup.*

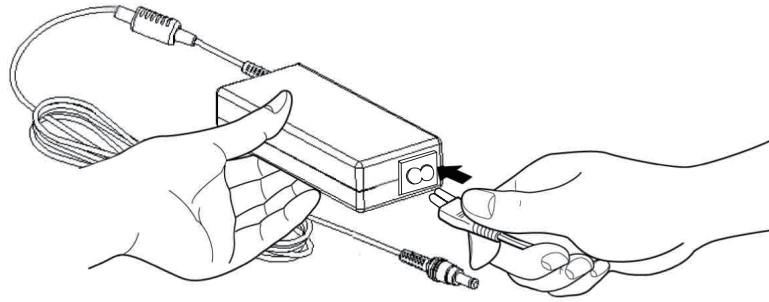
# Connecting the AC adaptor

Attach the AC adaptor when you need to charge the battery or you want to operate from AC power. It is also the fastest way to get started, because the battery pack will need to be charged before you can operate from battery power.

The AC adaptor can be connected to any power source supplying from 100 to 240 volts and 50 or 60 hertz. For details on using the AC adaptor to charge the battery pack, refer to Chapter 6, *Power and Power-Up Modes*.

- *Always use the TOSHIBA AC adaptor that was included with your computer or use AC adaptors specified by TOSHIBA to avoid any risk of fire or other damage to the computer. Use of an incompatible AC adaptor could cause fire or damage to the computer possibly resulting in serious injury. TOSHIBA assumes no liability for any damage caused by use of an incompatible adaptor.*
- *Never plug the AC adaptor into a power source that does not correspond to both the voltage and the frequency specified on the regulatory label of the unit. Failure to do so could result in a fire or electric shock, possibly resulting in serious injury.*
- *Always use or purchase power cables that comply with the legal voltage and frequency specifications and requirements in the country of use. Failure to do so could result in a fire or electric shock, possibly resulting in serious injury.*
- *The supplied power cord conforms to safety rules and regulations in the region from which the product is purchased and should not be used outside this region. For use in other regions, please buy power cords that conform to safety rules and regulations in that particular region.*
- *Do not use a 3-pin to 2-pin conversion plug.*
- *When you connect the AC adaptor to the computer, always follow the steps in the exact order as described in the User's Manual. Connecting the power cable to a live electrical outlet should be the last step otherwise the adaptor DC output plug could hold an electrical charge and cause an electrical shock or minor bodily injury when touched. As a general safety precaution, avoid touching any metal parts.*
- *Never place your computer or AC adaptor on a wooden surface, furniture, or any other surface that could be marred by exposure to heat since the computer base and AC adaptor's surface increase in temperature during normal use.*
- *Always place your computer or AC adaptor on a flat and hard surface that is resistant to heat damage. Refer to the enclosed Instruction Manual for Safety and Comfort for detailed precautions and handling instructions.*

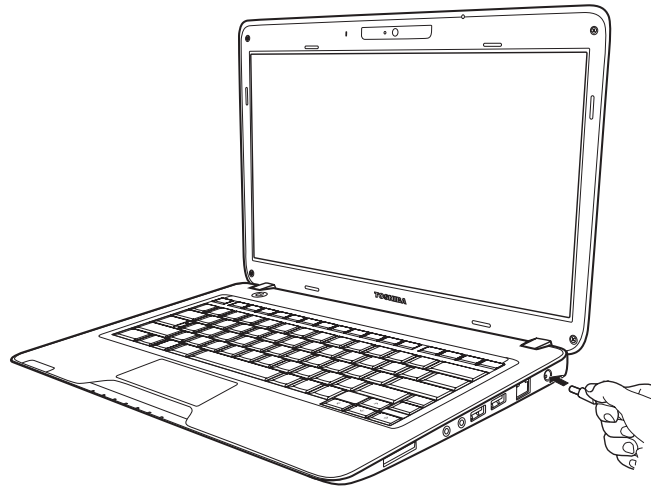
1. Connect the power cord to the AC adaptor.



*Connecting the power cord to the AC adaptor*

*Either a 2-pin or 3-pin adaptor/cord will be included with the computer depending on the model.*

2. Connect the AC adaptor's DC output plug to the **DC IN 19V** jack on the right side of the computer.



*Connecting the adaptor to the computer*

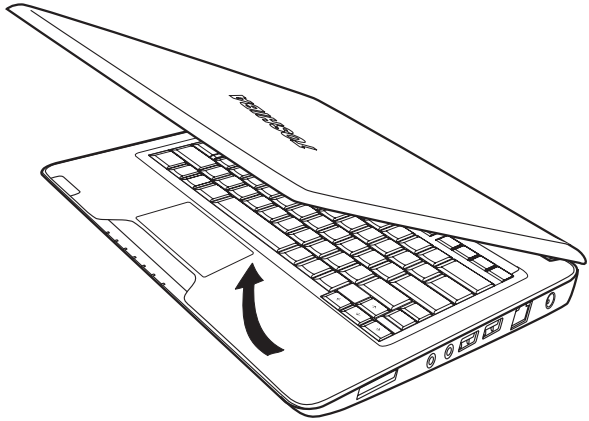
3. Plug the power cord into a live wall outlet - the **Battery** and **DC IN** indicators on the front of the computer should glow.

# Opening the display

The display panel can be opened to a wide range of angles for optimal viewing.

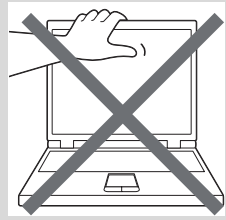
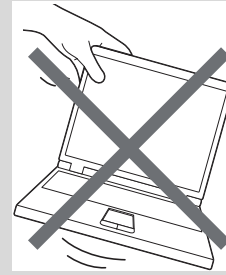
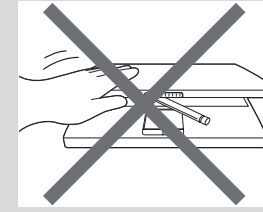
1. While holding down the palm rest with one hand so that the main body of the computer is not raised, slowly lift the display panel - this will allow the angle of the display panel to be adjusted to provide optimum clarity.

*Use reasonable care when opening and closing the display panel. Opening it vigorously or slamming it shut could damage the computer.*



*Opening the display*

- *When opening the panel, please be careful not to force it beyond the point where it moves easily.*
- *Be careful not to open the display panel too far as this could put stress on the display panel's hinges and cause damage.*
- *Do not press or push on the display panel.*
- *Do not lift the computer by the display panel.*
- *Do not close the display panel with pens or any other objects left in between the display panel and the keyboard.*
- *When opening or closing the display panel, place one hand on the palm rest to hold the computer in place and use the other hand to slowly open or close the display panel (Do not use excessive force when opening or closing the display panel).*

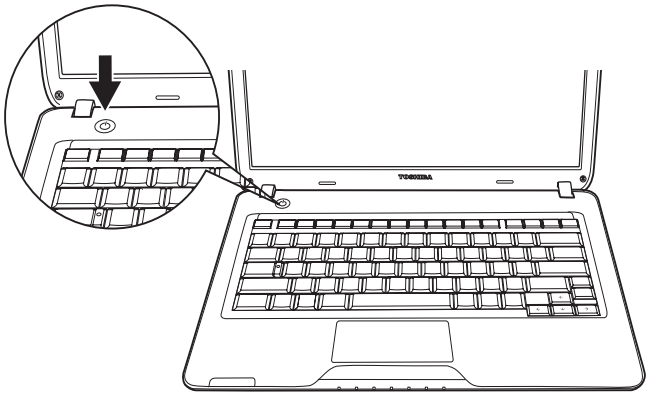




# Turning on the power

This section describes how to turn on the power.

- *After you turn on the power for the first time, do not turn it off until you have set up the operating system. Refer to the section Windows® 7 setup.*
- *Volume cannot be adjusted during Windows Setup.*

Press and hold the computer's power button for two or three seconds.



*Turning on the power*

# Windows® 7 setup

The Windows® 7 Startup Screen will be the first screen displayed when you turn on the power. Follow the on-screen instructions on each screen in order to properly install the operating system.

*When it is displayed, be sure to read the **Software License Terms** carefully.*

# Turning off the power

The power can be turned off in one of the following modes: Shut down (Boot), Hibernation or Sleep Mode.

## Shut Down mode (Boot mode)

When you turn off the power in Shut Down mode no data is saved and the computer will boot to the operating system's main screen.

1. If you have entered data, save it to the hard disk.

- *Make sure the Disk LED indicators are off. If you turn off the power while a disk (disc) is being accessed, you can lose data or damage the disk.*
- *Never turn off the power while an application is running. Doing so could cause loss of data.*
- *Never turn off the power, disconnect an external storage device or remove storage media during data read/write. Doing so can cause data loss.*

2. Click , then click the Shut down button .
3. Turn off any peripheral devices connected to your computer.

*Do not turn the computer or devices back on immediately. Wait a moment to let all capacitors fully discharge.*

## Sleep Mode

If you have to interrupt your work, you can turn off the power without exiting from your software. Data is maintained in the computer's main memory. When you turn on the power again, you can continue working right where you left off.

*When you have to turn off your computer aboard an aircraft or in places where electronic devices are regulated or controlled, always completely shut down the computer. This includes turning off any wireless communication switches or devices, and canceling settings that reactivate the computer automatically, such as a timer recording function. Failure to completely shut down the computer in this way could allow the operating system to reactivate and run pre-programmed tasks or preserve unsaved data, which could interfere with aviation or other systems, possibly causing serious injury.*

- *When the AC adaptor is connected, the computer will go into Sleep Mode according to the settings in the Power Options.*
- *To restore operation from Sleep Mode, press the power button or press any key. The latter action works only if Wake-up on Keyboard is enabled in HW Setup.*
- *If the computer automatically enters Sleep Mode while a network application is active, the application might not be restored when the computer wakes up from Sleep Mode.*
- *To prevent the computer from automatically entering Sleep Mode, disable Sleep Mode in the Power Options. That action, however, will nullify the computer's ENERGY STAR compliance.*

- *Before entering Sleep Mode, be sure to save your data.*
- *Do not install or remove a memory module while the computer is in Sleep Mode. The computer or the module could be damaged.*
- *Do not remove the battery pack while the computer is in Sleep Mode (unless the computer is connected to an AC power source). Data in memory will be lost.*

## Benefits of Sleep Mode

The Sleep Mode feature provides the following benefits:

- Restores the previous working environment more rapidly than does Hibernation Mode.
- Saves power by shutting down the system when the computer receives no input or hardware access for the duration set by the System Sleep Mode feature.
- You can use the panel power off feature.

## Entering Sleep Mode

You can enter Sleep Mode in one of three ways:

- Click the computer's power button.

  Please note that this feature must be enabled within the Power Options (to access it, click → **Control Panel** → **System and Security** → **Power Options**).

- Click , click arrow button and select **Sleep** from the menu.
- Close the display panel. This feature must be enabled. Please refer to the Power Options (to access it, click → **Control Panel** → **System and Security** → **Power Options**).

When you turn the power back on, you can continue where you left when you shut down the computer.

*You can also enable Sleep Mode by pressing **FN + F3**. Refer to Chapter 5, The Keyboard, for details.*

- *When the computer is shut down in Sleep Mode, the power indicator flashes Amber.*
- *If you are operating the computer on battery power, you can lengthen the operating time by turning it off into Hibernation Mode, as Sleep Mode consumes more power.*

### Sleep Mode limitations

Sleep Mode will not function under the following conditions:

- Power is turned back on immediately after shutting down.
- Memory circuits are exposed to static electricity or electrical noise.

## Hibernation Mode

The Hibernation feature saves the contents of memory to the hard disk when the computer is turned off. The next time the computer is turned on, the previous state is restored. The hibernation feature does not save the status of peripheral devices.

- *Save your data. While entering Hibernation Mode, the computer saves the contents of memory to the HDD. However, for safety sake, it is best to save your data manually.*
- *Data will be lost if you remove the battery or disconnect the AC adaptor before the save is completed. Wait for the disk indicator to go out.*
- *Do not install or remove a memory module while the computer is in Hibernation Mode. Data will be lost.*

### Benefits of Hibernation Mode

The Hibernation Mode feature provides the following benefits:

- Saves data to the hard disk when the computer automatically shuts down because of a low battery.
- You can return to your previous working environment immediately when you turn on the computer.
- Saves power by shutting down the system when the computer receives no input or hardware access for the duration set by the System hibernate feature.
- You can use the panel power off feature.

### Starting Hibernation Mode

*You can also enable Hibernation Mode by pressing **FN + F4**. Refer to Chapter 5, The Keyboard, for details.*

To enter Hibernation Mode, follow the steps below.

Click , click arrow button and select **Hibernate** from the menu.

### *Automatic Hibernation Mode*

The computer will enter Hibernation mode automatically when you press the power button or close the Display Screen. First, however, make the appropriate settings according to the steps below.

1. Open the **Control Panel**.
2. Open **System and Security** and open **Power Options**.
3. Select the **Choose what the power button does**.
4. Enable the desired Hibernation settings for **When I press the power button** and **When I close the lid**.
5. Click the **Save changes** button.

### *Data saving in Hibernation Mode*

When you turn off the power in Hibernation Mode, the computer takes a moment to save current memory data to the hard disk. During this time, the **disk** indicator will light.

After you turn off the computer and memory is saved to the hard disk, turn off the power to any peripheral devices.

*Do not turn the computer or devices back on immediately. Wait a moment to let all capacitors fully discharge.*

## Restarting the computer

Certain conditions require that you reset the system. For example, if:

- You change certain computer settings.
- An error occurs and the computer does not respond to your keyboard commands.
- There are three ways to reset the computer system:

1. Click , click arrow button and select **Restart** from the menu.
2. Press **CTRL + ALT + DEL** to display the menu window, then select **Restart** from the **Shut down** options.
3. Press the power button and hold it down for five seconds. Once the computer has turned itself off, wait between ten and fifteen seconds before turning it on again with the power button.

# System Recovery Options

A hidden partition is allocated on the hard drive for the System Recovery Options.

*The System Recovery Options feature will be unusable if this partition is deleted.*

## System Recovery Options

The System Recovery Options feature is installed on the hard disk when shipped from the factory. The System Recovery Options menu includes some tools to repair startup problems, run diagnostics or restore the system.
You can see the more information about "Startup Repair" in "Windows Help and Support" content.

The System Recovery Options can also be run manually to repair problems.

The procedure is as follows. Follow the instructions shown on the onscreen menu.

1. Turn off the computer.
2. Turn on the power, then press the F8 key intermittently.
3. The **Advanced Boot Options** menu will be displayed.
   Use the arrow keys to select **Repair Your Computer** and press **ENTER**.
4. Follow the on-screen instructions.

*The Windows® 7 Create a System Image feature can be used on all version of Windows® 7. However, to save the backup on a network location, the edition has to be either Professional or Ultimate.*

# Create Optical Recovery Media

- *You can use TOSHIBA Recovery Media Creator when you connect External ODD.*
- *Be sure to connect the AC adaptor when you create Recovery Media.*
- *Be sure to close all other software programs except the Recovery Media Creator.*
- *Do not run software such as screen savers which can put a heavy load on the CPU.*
- *Operate the computer at full power.*
- *Do not use power-saving features.*
- *Do not write to the disc when the anti-virus software is running. Wait for it to finish, then disable virus detection programs including any software that checks files automatically in the background.*
- *Do not use utilities, including those intended to enhance hard disk drive access speed. They may cause unstable operation and damage data.*
- *Do not shut down/log off or Standby/Hibernate while writing or rewriting the disc.*
- *Set the computer on a level surface and avoid places subjected to vibrations such as airplanes, trains, or cars.*
- *Do not use on unstable tables or other any other unstable surfaces.*

A recovery image of your computer is stored on the hard disk. You may use this image to create DVD recovery media using the following steps:

1. Prepare blank DVD media.
2. The application will allow you to choose a type of media to create recovery DVD including: DVD-R, DVD-RW, DVD+R and DVD+RW.

*Some media may not be compatible with the Optical Drive of your computer. Please verify your Optical Drive supports the blank media you choose.*

3. Turn on your computer to open Windows® 7.
4. Insert the (first) blank media into the tray of the Optical Drive.
5. Double Click the **Recovery Media Creator** icon on the Windows® 7 desktop, or select the application from Start menu.
6. After TOSHIBA Recovery Media Creator starts, select the type of media and the title you wish to copy to the media then click the **Create** button.

# Restoring the preinstalled software from the Recovery HDD

Part of the space on the hard disk drive is reserved as recovery partition for restoring the pre-installed software from the hard disk drive.

When re-setting up your hard disk, do not change, delete or add partitions in a manner other than specified in the manual. Otherwise, space for software may be destroyed.

In addition, if you use a third-party partitioning program to reconfigure partitions on your hard disk, it may become impossible to re-setup your computer.

1. Turn off your computer.
2. Hold down the 0 (zero) key on the keyboard and turn on your computer. When "TOSHIBA Leading Innovation >>>" appears, release the 0 (zero) key on the keyboard.
3. A menu appears. Follow the on-screen instructions.

*You can not use System Recovery Options if restoring the pre-installed software without System Recovery Options.*

*When you reinstall the Windows operating system, the hard disk will be reformatted and all data will be lost.*

# Restoring the preinstalled software from Recovery Media

If the preinstalled files are damaged, use the Recovery Media you created, or HDD recovery to restore them. To restore the operating system and all preinstalled software, follow the steps below.

*When you reinstall the Windows operating system, the hard disk will be reformatted and all data will be lost.*

1. Load the Recovery Media in the optional optical media drive and turn off the computer's power.
2. Hold down the **F12** key and turn on the power. When "TOSHIBA Leading Innovation >>>" appears, release the **F12** key.
3. Use the upper or lower cursor key to select the CD/DVD in the display menu. For details, refer to the *Boot Priority* section in Chapter 7, *HW Setup*.
4. A menu appears. Follow the on-screen instructions.

*When drivers/utilities are installed, you can setup the respective drivers/utilities from following place.*

*To open the setup files, Click* ***Start*** → ***All Programs*** → ***TOSHIBA*** → ***Applications and Drivers****.*

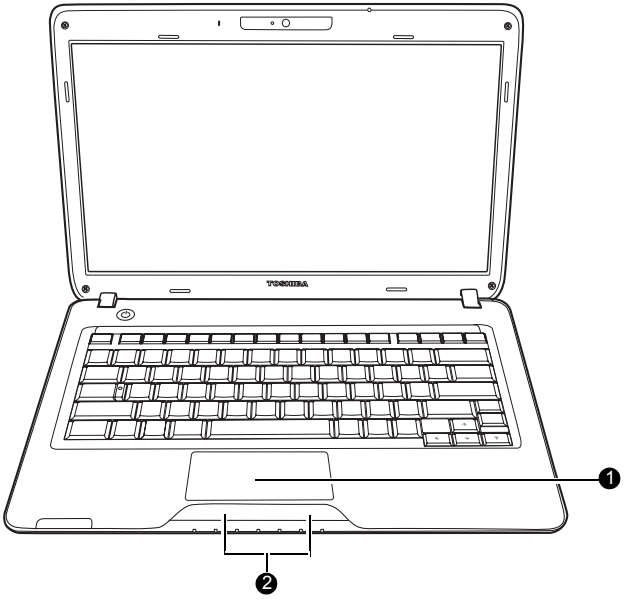
# Chapter 4

# Operating Basics

This chapter describes the basic operations of your computer, highlights the precautions that should be taken when using it.

## Using the Touch Pad

To use the Touch Pad, simply touch and move your fingertip across it in the direction you want the on-screen pointer to go.




1. Touch Pad 2. Touch Pad Control Buttons

*Touch Pad and Touch Pad control buttons*

Two buttons below the keyboard are used like the buttons on a mouse pointer. Press the left button to select a menu item or to manipulate text or graphics designated by the pointer. Press the right button to display a menu or other function depending on the software you are using.

*Do not press on the Touch Pad too hard or press a sharp object such as a ball point pen against the Touch Pad. The Touch Pad could be damaged.*

For some functions, you can tap the Touch Pad instead of pressing a control button.

**Click:** *Tap the Touch Pad once*

**Double-click:** *Tap the Touch Pad twice*

**Drag and drop:**

1. *Hold down the left control button and move the cursor to drag the item you want to move.*
2. *Lift your finger to drop the item where you want it.*

**Scroll:**

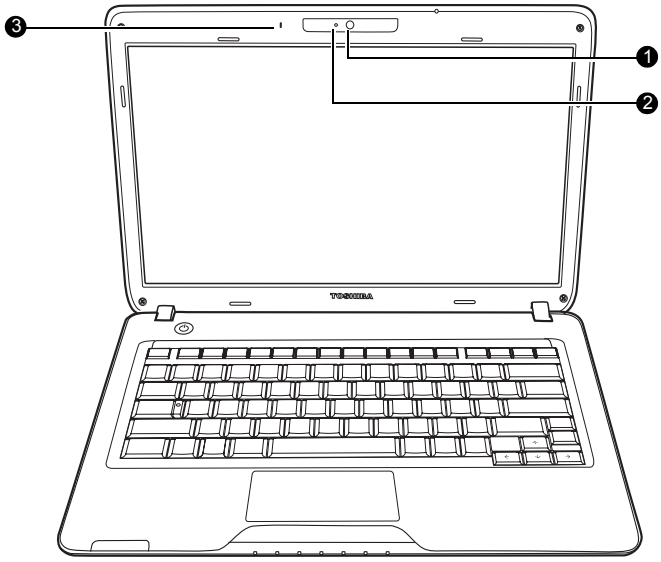
*Vertical: Move your finger up or down the right edge of the Touch Pad.*

*Horizontal: Move your finger left or right along the bottom edge of the Touch Pad.*

# Using the Web Camera

This section describes the bundled Web Camera utility, which can capture still and video images. The web camera will auto-run when Windows starts.

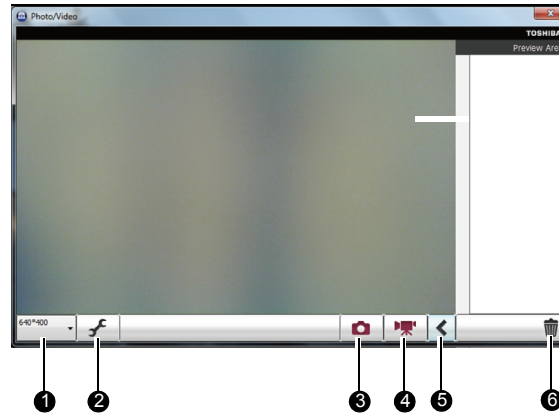
*Please unstick the protective plastic-film before using the Web Camera.*




1. Web Camera Lens
2. Web Camera LED
3. Built-in microphone

## Using the software

TOSHIBA Web Camera Application is pre-configured to start when you turn on Windows® 7; if you need to restart it go to **Start → All Programs → TOSHIBA → Utilities → Web Camera Application**.




1. CAMERA RESOLUTION
2. CAPTURE SETTING
3. CAPTURE STILL IMAGE
4. VIDEO RECORDING
5. OPEN/CLOSE PREVIEW AREA
6. DELETE RECORDED FILE

*Using the Software*

| | |
|---|---|
| **Delete Recorded File** | Choose a thumbnall of recorded file and click this button to delete this file from hard disk. |
| **Open/Close Preview Area** | Click to open Preview Area. One more to close Preview Area. |
| **Video Recording** | Click to start recording. One more to stop recording and see preview of the video in preview area. |
| **Capture Still Images** | Click to capture a still image, and see a preview of the captured image in preview area. |
| **Camera Resolution** | Choose resolution for Preview, Capture and Record. |
| **Capture Settings** | Open Capture Settings dialog box.<br>Chooses from the Basic tab to select photo and video saving location, select Capture Format and Video Quality. |

# Using the TOSHIBA Face Recognition

TOSHIBA Face Recognition uses a face verification library to verify the face data of users when they log in to Windows. The user can thus avoid having to enter a password or the like, which makes the login process easier. This software is preinstalled with some models.

## Note on Use

- TOSHIBA Face Recognition does not guarantee the correct identification of a user. Changes to the likeness of a registrant, such as hair style changes, wearing a cap, or wearing glasses may effect the recognition rates when such changes occur after the registrant had registered.
- TOSHIBA Face Recognition may incorrectly recognize faces that are similar to a registrant.
- For high security purposes, TOSHIBA Face Recognition is not a suitable substitute for Windows passwords. When security is a high priority, use your established Windows passwords to log in.
- Bright background light and/or shadows may prevent a registrant from being recognized correctly. In that case, log in using your Windows password. If recognition of a registrant fails repeatedly, refer to your computer documentation to learn ways to improve recognition performance.

## Disclaimer

TOSHIBA does not guarantee that the face recognition utility technology will be completely secure or error-free. TOSHIBA does not guarantee that the face recognition utility will accurately screen out unauthorized users at all times. TOSHOBA is not liable for any failure or damage that might arise out of the use of the face recognition software or utility.

TOSHIBA, ITS AFFILIATES AND SUPPLIERS SHALL HAVE NO RESPONSIBILITY FOR DAMAGE TO OR LOSS OF ANY BUSINESS, PROFITS, PROGRAMS, DATA, NETWORK SYSTEMS OR REMOVABLE STORAGE MEDIA ARISING OUT OF OR RESULTING FROM THE USE OF THE PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

## How to register the Face Recognition Data

Take a picture for facial verification purposes, and register the data needed when you log in. To register the data needed when you log in, follow the steps as described below:

1. To launch this utility, click **Start** → **All Programs** → **TOSHIBA** → **Utilities** → **Face Recognition**.
   - The **Registration** screen is displayed for a logged-in user whose face has not been registered.
   - The **Management** screen is displayed for a logged-in user whose face has already been registered.

2. Click the **Register** button in the **Management** screen. The Registration screen is displayed.
   - If you wish to practice, click on the **Next** button in the **Registration** screen.
   - If you do not wish to practice, click on the **Skip** button in the **Registration** screen.
3. Click the **Next** button to start the guide.
4. First, take a picture while moving your neck slightly to the left and right.
5. Now take a picture while moving your neck down and up.
   - Click the **Back** button to practice the guide once more.
6. Click the **Next** button to start image-capturing process. Adjust the position of your face so that it fits within the face-shaped frame.
7. Once your face has been positioned properly, the recording will commence. Start moving your neck very slightly to the left and right, and then move your neck down and up.
8. Registration will end after you have repeatedly moved your neck left, right, down and up. When the register succeeds, below message will be displayed on the screen:

   ```
   Registration successful. Now we'll do the
   verification test. Click the Next button.
   ```

   Click the **Next** button to perform the verification test.
9. Perform the verification test. Face the screen as you do when you register.
   - If verification fails, click the **Back** button and re-register. Please refer to step 8 from step 6.
10. If verification is successful, click the Next button and register an account.
11. Register the account. Fill in the account registration fields.
    - Fill in the all fields.

    When you have finished it, click **OK** button.
12. The **Management** screen is displayed. The registered account name will be displayed. Clicking on it will cause the captured image of your face to be displayed on the left.

## How to Delete the Face Recognition Data

Delete image data, account information, and personal record data created during registration. To delete the Face Recognition Data, follow the steps as described below:

1. To launch this utility, click **Start** → **All Programs** → **TOSHIBA** → **Utilities** → **Face Recognition**. The **Management** screen is displayed.
2. Select a user which is deleted in the **Management** screen.

3. Click the Delete button. "**You are about to delete the user data. Would you like to continue?**" will be displayed on the screen
   - If you do not want the data to be deleted, click the **No** button and you will then be returned to the **Management** screen.
   - Clicking on the **Yes** button will remove the selected user from the **Management** screen.

## How to launch the help file

For further information on this utility, please refer to help file.

- To launch the help file, click **Start** → **All Programs** → **TOSHIBA** → **Utilities** → **Face Recognition Help**.

## Windows Logon via TOSHIBA Face Recognition

This section explains how to login to Windows with TOSHIBA Face Recognition. Two authentication modes are provided.

- **1:N Mode Login screen** : If the face authentication tile is selected by default, you can log in without using the keyboard or mouse.
- **1:1 Mode Login screen** : This mode is essentially the same as 1:N mode, but the **Select Account** screen will appear before the **Display Captured Image** screen, and you will need to select the user account to be authenticated in order to start the authentication process.

### *1:N Mode Login screen*

1. Turn on the computer.
2. The **Select Tiles** screen will be displayed.
3. Select **Start face recognition**.
4. "**Please face the camera**" will be displayed.
5. Verification will be performed. If the authentication is successful, the image data taken in step 4 will be faded in and placed over one another.
   - If an error occurs during authentication, you will be returned to the **Select Tiles** screen.
6. **Windows Welcome** screen will be displayed, and will be logged in automatically to Windows.

### *1:1 Mode Login screen*

1. Turn on the computer.
2. The **Select Tiles** screen will be displayed.
3. Select **Start face recognition**.
4. The **Select Account** screen will be displayed.
5. Select the account, and click the **arrow** button.
6. "**Please face the camera**" will be displayed.

7. Verification will be performed. If the authentication is successful, the image data taken in step 6 will be faded in and placed over one another.
   - If an error occurs during authentication, you will be returned to the **Select Tiles** screen.
8. **Windows Welcome** screen will be displayed, and will be logged in automatically to Windows.
   - If authentication was successful, but an authentication error subsequently occurred during the login to Windows, you will be asked to provide your account information.

## Using the microphone

Your computer has a built-in microphone that can be used to record monaural sounds into your applications. It can also be used to issue voice commands to applications that support such functions. (Built-in microphone is provided with some models)
Since your computer has a built-in microphone and speaker, "feedback" may be heard under certain conditions. Feedback occurs when sound from the speaker is picked up in the microphone and amplified back to the speaker, which amplifies it again to the microphone.
This feedback occurs repeatedly and causes a very loud, high-pitched noise. It is a common phenomenon that occurs in any sound system when the microphone input is output to the speaker (throughput) and the speaker volume is too loud or too close to the microphone. You can control throughput by adjusting the volume of your speaker or through the Mute function in the Master Volume panel. Refer to your Windows documentation for details on using the Master Volume panel.

## TOSHIBA Disc Creator

*You can use TOSHIBA Disc Creator when you connect External ODD.*

Note the following limitations when you use TOSHIBA Disc Creator:

- DVD-Video cannot be created using TOSHIBA Disc Creator.
- DVD-Audio cannot be created using TOSHIBA Disc Creator.
- You cannot use the TOSHIBA Disc Creator "Audio CD" function to record music to the DVD-R/-RW or DVD+R/+RW media.
- Do not use the "Disc Backup" function of TOSHIBA Disc Creator to copy
- DVD-Video and DVD-ROM with copyright protection. DVD-RAM media cannot be backed up with the "Disc Backup" function of TOSHIBA Disc Creator.

- You cannot back up a CD-ROM or CD-R/RW to DVD-R/-RW or DVD+R/+RW using the "Disc Backup" function of TOSHIBA Disc Creator.
- You cannot back up DVD-ROM, DVD-Video or DVD-R/-RW or DVD+R/+RW to CD-R/RW using TOSHIBA Disc Creator.
- TOSHIBA Disc Creator cannot record in packet format.
- You might not be able to use the Disc Backup function of TOSHIBA Disc Creator to backup a DVD-R/-RW or DVD+R/+RW disc that was made with other software on a different DVD-R/-RW or DVD+R/+RW recorder.
- If you add data to a DVD-R and DVD+R disc that you have already recorded to, you might not be able to read the added data under some circumstances. It cannot be read in 16-bit operating systems, such as Windows 98SE and Windows ME, in Windows NT4 you will need Service Pack 6 or later to read the data, and in Windows 2000 you will need Service Pack 2 or later to read it. Some optical media drives cannot read added data regardless of the operating system.
- TOSHIBA Disc Creator does not support recording to DVD-RAM discs. To record to a DVD-RAM, use Explorer or other similar utility.
- When you back up a DVD disc, be sure the source drive supports recording to DVD-R/-RW or DVD+R/+RW discs. If the source drive does not support recording to DVD-R/-RW or DVD+R/+RW discs, it might not be backed up correctly.
- When you back up a DVD-R, DVD-RW, DVD+R or DVD+RW, be sure to use the same type of disc.
- You cannot partially delete any data written to a CD-RW, DVD-RW or DVD+RW disc.

### *Data Verification*

To verify that data is written or rewritten correctly, follow the steps below before you write or rewrite a Data CD/DVD.

1. Display the setting dialog box by one of the following two steps:
   - Click the setting button ( ) for writing on the main toolbar in the **Data Disc** mode.
   - In the **Settings** menu, select **Settings for Each Mode**, then **Data Disc**.
2. Mark the **Verify Written Data** check box.
3. Select **File Open** or **Full Compare** mode.
4. Click the OK button.

## Wireless communications

The computer's wireless communication function supports both Wireless LAN and Bluetooth devices.

Only some models are equipped with both Wireless LAN and Bluetooth functions.

- *Do not use the Wireless LAN (Wi-Fi) or Bluetooth functionalities near a microwave oven or in areas subject to radio interference or magnetic fields. Interference from a microwave oven or other source can disrupt Wi-Fi or Bluetooth operation.*
- *Turn Wi-Fi and Bluetooth functionalities off when near a person who may have a cardiac pacemaker implant or other medical electric device. Radio waves may affect pacemaker or medical device operation, possibly resulting in serious injury. Follow the instruction of your medical device when using any Wi-Fi or Bluetooth functionality.*
- *Always turn off Wi-Fi or Bluetooth functionality if the computer is near automatic control equipment or appliances such as automatic doors or fire detectors. Radio waves can cause malfunction of such equipment, possibly resulting in serious injury.*
- *It may not be possible to make a network connection to a specified network name using the ad hoc network function.*
  *If this occurs, the new network(*) will have to be configured for all computers connected to the same network in order to re-enable network connections.*
  ** Please be sure to use new network name.*

## Wireless LAN

The Wireless LAN supports the b, g standards and n* draft2.0 but it is compatible with other LAN systems based on Direct Sequence Spread Spectrum/Orthogonal Frequency Division Multiplexing radio technology that complies with IEEE802.11 Wireless LAN standard.

* Depends on the installed Wireless LAN module.

- Roaming over multiple channels
- Card Power Management
- Wired Equivalent Privacy (WEP) data encryption, based on the 128 bit encryption algorithm.
- Advanced Encryption Standard (AES) data encryption, based on 256 bit encryption algorithm.

- *The transmission speed over the wireless LAN, and the distance over which the wireless LAN can reach, may vary depending on surrounding electromagnetic environment, obstacles, access point design and configuration, client design and software/hardware configurations. The transmission rate described is the theoretical maximum speed as specified under the appropriate standard - the actual transmission speed will be lower than the theoretical maximum speed.*
- *To enable or disable wireless communication, use the Hot Key FN+F8. For more information see the Hot keys section in Chapter 5.*

## Security

- Be sure to enable the encryption function otherwise you may expose your computer to illegal access by an outsider across the Wireless LAN which may cause intrusion, eavesdropping, and the loss or destruction of stored data. TOSHIBA strongly recommend the customer to enable the encryption function.
- TOSHIBA is not liable for the eavesdropping of data due to the use of Wireless LAN and the damage thereof.

## Bluetooth Stack for Windows by TOSHIBA

Please note that this software is specifically designed for the following operating systems:

- Windows® 7

  Detailed information regarding the use with these operating systems is listed below. Please refer also to the electronic information which is included with each software.

*This Bluetooth Stack is based on Bluetooth Version 2.0/2.1+EDR specification. TOSHIBA cannot confirm compatibility between any PC products and/or other electronic devices that use Bluetooth other than TOSHIBA notebook computers.*

### *Release Notes related to the Bluetooth Stack for Windows by TOSHIBA*

1. Fax application software:

   Regarding FAX application software, there are some software that you cannot use on this Bluetooth Stack.

2. Multi User:

   On Windows® 7, the use of Bluetooth is not supported in a multi-user environment. This means that, when you use Bluetooth, other users logged onto the same computer will not be able to use its Bluetooth functionality.

### *Product Support:*

The latest information regarding Operating System support, Language Support or available upgrades can be found on our web site http://www.toshiba-europe.com/computers/tnt/bluetooth.htm in Europe or www.pcsupport.toshiba.com in the United States.

## Enable/Disable Wireless communication with hot key

You can enable or disable Wireless communication (Wireless LAN and Bluetooth) functions, with hot keys (**FN** + **F8**). No transmissions are sent or received when wireless communication is turned off.

*Set the Wireless LAN function to off in airplanes and hospitals. Check the indicator. It will stop glowing when the wireless communication function is off.*

### Wireless activity LED

The wireless activity LED indicates the status of the wireless communication functions.

| Indicator status | Indication |
|---|---|
| LED off | The wireless communication is set to off - no wireless functionality is available. |
| LED glows | Wireless communication is set to on. Wireless LAN or Bluetooth is turned on by an application. |

If you used the Task Bar to disable Wireless LAN, you will need to restart the computer to re-enable it. Alternatively, you can also follow this procedure:

1. In the **Control Panel**, click **System and Security**.
2. Click the **Device Manager**. The Device Manager window opens. Click **Network adaptors**.
3. Select your preferred Network adaptor, then click the Enable button in the tool bar.

## LAN

The computer has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T), Fast Ethernet LAN (100 megabits per second, 100BASE-TX). This section describes how to connect/disconnect to a LAN.

### LAN cable types

*The computer must be configured properly before connecting to a LAN. Logging onto a LAN using the computer's default settings could cause a malfunction in LAN operation. Check with your LAN administrator regarding set-up procedures.*

If you are using Fast Ethernet LAN (100 megabits per second, 100BASE-TX), be sure to connect with a CAT5 cable or higher. You cannot use a CAT3 cable.

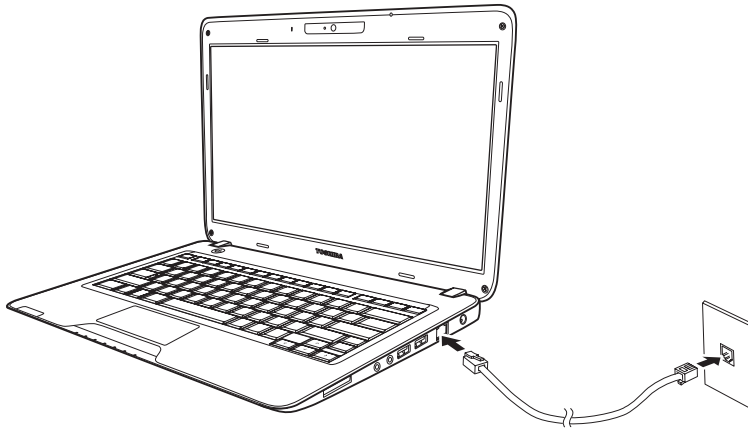
If you are using Ethernet LAN (10 megabits per second, 10BASE-T), you can connect with a CAT3 or higher cable.

## Connecting LAN cable

- *Do not connect any other cable to the LAN jack except the LAN cable. Otherwise, malfunctions or damage may occur.*
- *Do not connect any power supplying device to the LAN cable that is connected to the LAN jack. Otherwise, malfunctions or damage may occur.*

To connect the LAN cable, follow the steps below.

1. Turn off the power to the computer and to all external devices connected to the computer.
2. Plug one end of the cable into the LAN jack. Press gently until you hear the latch click into place.



*Connecting the LAN cable*

3. Plug the other end of the cable into a LAN hub connector. Check with your LAN administrator before connecting to a hub.

## Disconnecting LAN cable

To disconnect the LAN cable, follow the steps below.

1. Pinch the lever on the connector in the computer's LAN jack and pull out the connector.
2. Disconnect the cable from the LAN hub in the same manner. Check with your LAN administrator before disconnecting from the hub.

# USB Sleep and Charge function

Your computer can supply USB bus power (DC5V) to the USB port even when the power of the computer is turned OFF. "Power OFF" includes standby mode, hibernation mode or shutdown state.

This function can only be used for ports that support the USB Sleep and Charge function (hereinafter called "compatible ports").

Compatible ports are USB ports that have the (⚡) symbol icon.

You can use the USB Sleep and Charge function to charge certain USB compatible external devices such as mobile phones or portable digital music players.

However, the USB Sleep and Charge function may not work with certain external devices even if they are compliant with the USB specification. In those cases, turn the power of the computer ON to charge the device.

- *The USB Sleep and Charge function only works for compatible ports. This function is disabled in the default setting.*
- *When USB Sleep and Charge function is set to [Enabled], USB bus power (DC5V) will be supplied to compatible ports even when the power of the computer is turned OFF.USB bus power (DC5V) is similarly supplied to the external devices which are connected to the compatible ports. However, some external devices cannot be charged solely by supplying USB bus power (DC5V).As for the specifications of the external devices, please contact the device manufacturer or check the specifications of the external devices thoroughly before use.*
- *Using the USB sleep and charge function to charge external devices will take longer than charging the devices with their own chargers.*
- *If USB Sleep and Charge function is enabled, the computer's battery will discharge during hibernation or when the computer is turned off. It is recommended that you connect the AC adaptor to the computer when enabling the USB Sleep and Charge function.*
- *External devices connected to the USB bus power (DC5V) function that interfaces with the power ON/OFF of the computer may always be in an operational state.*
- *When there is a current overflow of the external devices connected to the compatible ports, USB bus power (DC5V) supply may be stopped for safety reasons.*

*Metal paper clips or hair pins/clips will generate heat if they come into contact with USB ports. Do not allow USB ports to come into contact with metal products, for example when carrying the computer in your bag.*

## Starting the USB Sleep and Charge Utility

To start the utility, click **Start** → **All Programs** → **TOSHIBA** → **Utilities** → **USB Sleep and Charge**.

You can set mode1/mode2/mode3/mode4/disable USB sleep and charge function also in BIOS Setup menu.

## Enabling USB Sleep and Charge

This utility can be used to enable and disable the USB Sleep and Charge function.

Check the "USB Sleep and Charge" check box. In the default state this function is disabled.

### Power supply mode settings

There are several USB Sleep and Charge function modes.

"Mode 4(Default)" should normally be used. Set one of the other modes (try from "Mode 3" to "Mode 1" )*1 if the charge function cannot be used in "Mode 4(Default)" .

This function may not be able to be used with some connected external devices even if the appropriate mode is selected. In this situation, uncheck the "USB Sleep and Charge" check box and stop using this function.

*1 Some mode may not be displayed in the list.

### Battery Settings

This utility can be used to specify the lower limit of remaining battery life for USB Sleep and Charge. Move the slider bar to specify the lower limit. If the remaining battery life falls below the setting, the "USB Sleep and Charge function" will be stopped. Unchecking the "Enable under Battery Mode" check box sets the utility to only charge when the AC adaptor is connected.

## Cleaning the computer

To help ensure long, trouble-free operation, keep the computer free of dust and use care with liquids around the computer.

- Be careful not to spill liquids into the computer. If the computer does get wet, turn the power off immediately and let the computer dry completely before you turn it on again.
- Clean the computer using a slightly damp (with water) cloth. You can use glass cleaner on the display. Spray a small amount of cleaner on a soft, clean cloth and wipe the screen gently with the cloth.

*Never spray cleaner directly onto the computer or let liquid run into any part of it. Never use harsh or caustic chemical products to clean the computer.*

- Remove the dust from the cooling vents on the Left side of the computer regularly with a vacuum cleaner. Refer to Chapter 2, *The Grand Tour*, *Left side*.

# Moving the computer

The computer is designed for rugged durability. However, a few simple precautions taken when moving the computer will help ensure trouble-free operation.

- Before moving the computer, it recommends changing the function of TOSHIBA HDD Protection. Refer to the section, *Using the Hard Disk Drive (HDD) Protection*, in this chapter.
- Make sure all disk activity has ended before moving the computer. Check the **HDD** indicator on the computer.
- Turn off (shut down) the computer.
- Disconnect the AC adaptor and all peripherals before moving the computer.
- Close the LCD display panel. Do not pick up the computer by its display panel.
- Before carrying your computer, shut down the computer, disconnect the power cable and wait until the PC cools down. Failure to follow this instruction could result in minor injury.
- Always turn off the power when you move the computer. If the power button has a lock, set it to the lock position. Also be careful not to subject the computer to impact. Failure to follow this instruction could result in damage to computer, computer failure or loss of data.
- Use the carrying case when transporting the computer.
- When carrying your computer, be sure to hold it securely so that it does not fall or hit anything.
- Do not carry your computer by holding protruded portions.

# Using the Hard Disk Drive (HDD) Protection

This computer has a function for reducing the risk of damage on the hard disk drive.

Using an acceleration sensor built into the computer, TOSHIBA HDD Protection detects vibration, falls and shocks, and similar signs of movement of the computer, and automatically moves the Hard Disk Drive head to a safe position to reduce the risk of damage that could be caused by head-to-disk contact.

*This function does not guarantee that the hard disk drive will not be damaged.*

When vibration is detected, a message will be displayed on the screen, and the icon in the taskbar notification area will change to the protection state. This message is displayed until the **OK** button is pressed or 30 seconds pass. When vibration subsides, the icon returns to the normal state.

### Taskbar Icon

| State | Icon | Description |
|---|---|---|
| **Normal** | | TOSHIBA HDD Protection is enabled. |
| **Protection** | | TOSHIBA HDD Protection is active. The hard disk drive head is in a safe position. |
| **OFF** | | TOSHIBA HDD Protection is disabled. |

## TOSHIBA HDD Protection Properties

You can change the TOSHIBA HDD Protection settings by using the TOSHIBA HDD Protection Properties window. To open the window, click **Start → All Programs → TOSHIBA → Utilities → HDD Protection Settings**. The window can also be started from the icon on the Taskbar or from the **Control Panel**.

### HDD Protection

You can choose whether to enable or disable TOSHIBA HDD Protection.

### Detection Level

This function can be set to four levels. The sensitivity levels in which vibrations, impacts and their similar signs are detected can be set to OFF, 1, 2 and 3 in ascending order. Level 3 is recommended for better protection of the computer. However, when the computer is used in a mobile environment or in other unstable conditions, setting the detection level to 3 could result in frequent execution of TOSHIBA HDD Protection, which will slow Hard Disk Drive reading and writing. Set a lower detection level when the speed of Hard Disk Drive reading and writing is a priority.

Different detection levels can be set depending on whether the computer is used as handheld or mobile usages, or whether it is used in a stable environment such as on a table in the workplace or at home. By setting different detection levels for the computer depending on whether it runs with the AC power (desktop) or with batteries (handheld or mobile usage), the detection level automatically switches according to the power connection mode.

### 3D Viewer

This feature displays a 3D object on the screen which moves in according to tilting or vibration of the computer.

When the TOSHIBA HDD Protection detects computer vibration the Hard Disk Drive head is parked and the 3D object disk rotation will stop. When the head is un-parked the disk will begin to rotate again.

The **3D Viewer** can be started from the icon in the task tray.

- *This 3D object virtually represents the Computer's internal Hard Disk Drive. This representation may vary from the actual number of disks, disk rotation, head movement, part size, shape and direction.*
- *This feature may use a large amount of CPU and memory on some models. The computer may become slow or sluggish when attempting to run other applications while the 3D Viewer is displayed.*
- *Intensely shaking the computer or other subjecting it to strong impacts may cause damage to the computer.*

## Details

To open the Details window, click the **Setup Detail** button in the TOSHIBA HDD Protection Properties window.

### Detection Level Amplification

When the AC adaptor is disconnected or the lid is closed, HDD Detection assumes that the computer will be carried and sets the detection level to the maximum for 10 seconds.

### TOSHIBA HDD Protection Message

Specify whether to display a message when TOSHIBA HDD Protection is active.

- *This function does not work when the computer is starting, in Sleep Mode, in Hibernation Mode, in transition to Hibernation Mode, recovering from Hibernation Mode, or powered off. Be sure to not subject the computer to vibration or impact while the function is disabled.*

# Chapter 5

# The Keyboard

The computer's keyboard layouts are compatible with a 104/105-key enhanced keyboard. By pressing some keys in combination, all the 104/105-key keyboard functions can be executed on the computer.

The number of keys on your keyboard depends on which country/region's keyboard layout your computer is configured with. Keyboards for numerous languages are available.

There are six types of keys: Typewriter keys, Function keys, Soft keys, Hot keys, Windows® special keys and Keypad overlay.

## Typewriter keys

The typewriter keys produce the upper- and lower-case letters, numbers, punctuation marks, and special symbols that appear on the screen.

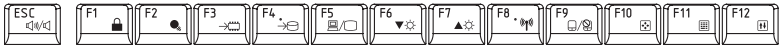
There are some differences, however, between using a typewriter and using a computer keyboard:

- Letters and numbers produced in computer text vary in width. Spaces, which are created by a "space character," may also vary depending on line justification and other factors.
- The lowercase l (el) and the number 1 (one) are not interchangeable on computers as they are on a typewriter.
- The uppercase O (oh) and the 0 (zero) are not interchangeable.
- The **CAPS LOCK** function key locks only the alphabetic characters in uppercase while the shift lock on a typewriter places all keys in the shifted position.
- The **SHIFT** keys, the **TAB** key, and the **BACK SPACE** key perform the same function as their typewriter counterparts but also have special computer functions.

*Never remove the key caps on your keyboard. Doing so could cause damage to the parts under the key caps.*

# F1 ... F12 function keys

The function keys (not to be confused with **FN**) are the 12 keys at the top of your keyboard. These keys function differently from other keys.



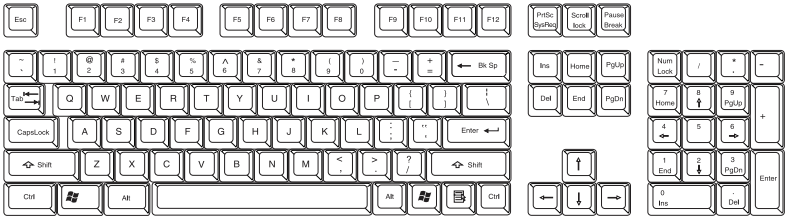

**F1** through **F12** are called function keys because they execute programmed functions when pressed. Used in combination with the **FN** key, keys marked with icons execute specific functions on the computer. Refer to the section, *Soft keys: FN key combinations*, in this chapter. The function executed by individual keys depends on the software you are using.

# Soft keys: FN key combinations

The FN (function) is used in combination with other keys to form soft keys. Soft keys are key combinations that enable, disable or configure specific features.

*Some software may disable or interfere with soft-key operations. Soft-key settings are not restored by the Sleep Mode feature.*

## Emulating keys on enhanced keyboard



*A 104-key enhanced keyboard layout*

The keyboard is designed to provide all the features of the 104-key enhanced keyboard, shown in figure above. The 104/105-key enhanced keyboard has a numeric keypad and scroll lock key. It also has additional **ENTER** and **CTRL** keys to the right of the main keyboard. Since the keyboard is smaller and has fewer keys, some of the enhanced keyboard functions must be simulated using two keys instead of one on the larger keyboard.

Your software may require you to use keys that the keyboard does not have. Pressing the **FN** key and one of the following keys simulates the enhanced keyboard's functions.

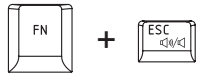
Press **FN + F10** or **FN + F11** to access the computer's integrated keypad.

When activated, the keys with grey markings on their bottom edge become either numeric keypad keys (**FN + F11**) or cursor control keys (**FN + F10**).

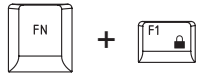
Please refer to the *Keypad overlay* section in this chapter for more information on how to operate these keys, taking care to note that the power on default for both settings is off.

Press **FN + F12** to lock the cursor on a specific line. The power on default is off.

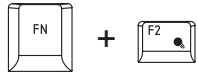
# Hot keys



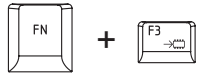

**Mute:**Turns the volume on and off.



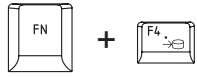

**Lock:** Enters "Lock computer" mode. To restore your desktop, you need to log on again.



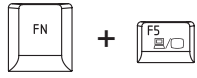

**Power plan:** Displays the power save modes and lets you change the power settings.




**Sleep:** This hot key switches the system to Sleep Mode.

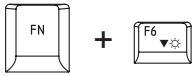



**Hibernate:**This hot key switches the system to Hibernate mode.

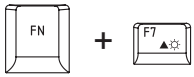



**Output:** Changes the active display device.

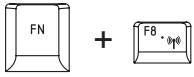
*To use a simultaneous mode, you must set the resolution of the internal display panel to match the resolution of the external display device.*




**Brightness (decreases):** Turns the monitor brightness down.

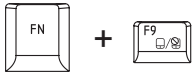



**Brightness (increases):** Turns the monitor brightness up.

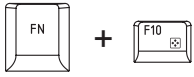



**Wireless:** Switches the active wireless devices.

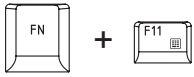
- *If no wireless communication device is installed, no dialog box will appear.*
- *This hot key is available only when the wireless communication is set to enabled in BIOS Setup.*



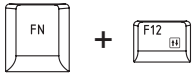

**Touch Pad:** Enables or disables the Touch Pad function.



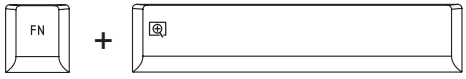

**Enable Keypad:** Enables or disables the Key Pad function.



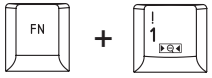

**Number Lock:** Enables or disables the Number Lock function.



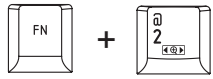

**Scroll Lock:** Enables or disables the Scroll Lock function.



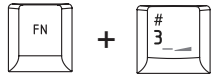

**Zoom:** Changes the display resolution.



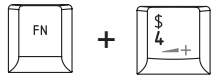

**TOSHIBA Zooming Utility (reduce):** Reduces the icon size on the desktop or the font size within one of the supported application windows.




**TOSHIBA Zooming Utility (enlarge):** Increases the icon size on the desktop or the font size within one of the supported application windows.




**Volume down:** Pressing **FN** + **3** to decrease the volume in increment.




**Volume up:** Pressing **FN** + **4** to increase the volume in increment.

### FN Sticky key (Depends on the model you purchased)

You can use the TOSHIBA Accessibility Utility to make the **FN** key sticky, that is, you can press it once, release it, and then press an "**F number**" key. To start the TOSHIBA Accessibility Utility, click **start**, point to **All Programs**, point to **TOSHIBA**, point to **Utilities** and click **Accessibility**.

## Windows® special keys

The keyboard provides two keys that have special functions in Windows® : Windows Start Button activates the **Start** menu and the other, the application key, has the same function as the secondary mouse button.

This key activates the Windows® **Start** menu.

This key has the same function as the secondary mouse button.

# Keypad overlay

Your computer's keyboard does not have an independent numeric keypad, but its numeric keypad overlay functions like one.

The keys in the centre of the keyboard with gray letters make up the numeric keypad overlay. The overlay provides the same functions as the numeric keypad on the 104/105-key enhanced keyboard described previously.

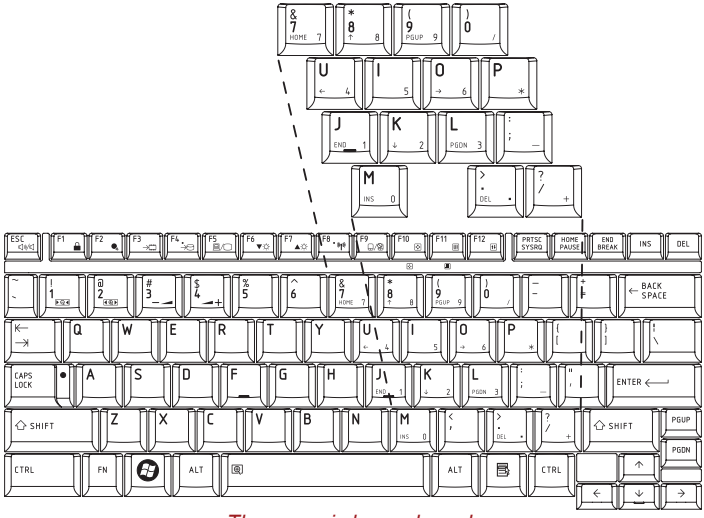
## Turning on the overlays

### *Arrow Mode*

To turn on Arrow Mode, press **FN + F10** - the Arrow Mode indicator lights and you are able to access cursor and page control functions by using the keys. You are able to press **FN + F10** again to turn off this overlay function.

### *Numeric Mode*

To turn on Numeric Mode, press **FN + F11** - the Numeric Mode indicator lights and you are able to access numeric characters by using the keys. You are able to press **FN + F11** again to turn off this overlay function.



*The numeric keypad overlay*

### Temporarily using normal keyboard (overlay on)

While using the overlay, you can temporarily access the normal keyboard without turning off the overlay:

1. Hold **FN** and press any other key. All keys will operate as if the overlay were off.
2. Type upper-case characters by holding **FN + SHIFT** and pressing a character key.
3. Release **FN** to continue using the overlay.

### Temporarily using overlay (overlay off)

While using the normal keyboard function, you can temporarily use the keypad overlay without having to turn it on:

1. Hold down **FN** key.
2. Check the keyboard indicators as pressing the **FN** key will turn on the most recently used overlay function - if the Numeric Mode indicator lights you can use the overlay for numeric entry, while if the Arrow Mode indicator lights, you can use the overlay for cursor and page control function.
3. Release **FN** key to return to normal keyboard operation.

### Temporarily changing modes

If the computer is in **Numeric Mode**, you can switch temporarily to **Arrow Mode** by pressing a **SHIFT** key, while if it is in **Arrow Mode**, you can switch temporarily to **Numeric Mode** by also pressing a **SHIFT** key.

## Generating ASCII characters

Not all ASCII characters can be generated using normal keyboard operation. But, you can generate these characters using their ASCII codes.

With the overlay on:

1. Hold down **ALT**.
2. Using the overlay keys, type the ASCII code.
3. Release **ALT**, and the ASCII character appears on the display screen.

With the overlay off:

1. Hold down **ALT + FN**.
2. Using the overlay keys, type the ASCII code.
3. Release **ALT + FN**, and the ASCII character appears on the display screen.

# Chapter 6

# Power and Power-Up Modes

The computer's power resources include the AC adaptor and internal batteries. This chapter gives details on making the most effective use of these resources including charging and changing batteries, tips for saving battery power, and power up modes.

## Power conditions

The computer's operating capability and battery charge status are affected by the power conditions: whether an AC adaptor is connected, whether a battery is installed and what the charge level is for the battery.

**Table Power conditions**

| | | **Power on** | **Power off (no operation)** |
|---|---|---|---|
| **Universal AC adaptor connected** | Battery fully charged | • Operates<br>• LED: **Battery** green | • LED: **Battery** green |
| | Battery partially charged or no charge | • Operates<br>• Charge<br>• LED: **Battery** amber | • Charge<br>• LED: **Battery** amber |
| | No battery installed | • Operates<br>• No charge<br>• LED: **Battery** off | • No charge<br>• LED: **Battery** off |

**Table Power conditions**

| | | Power on | Power off (no operation) |
|---|---|---|---|
| **Universal AC adaptor not connected** | Battery charge is above low battery trigger point | • Operates<br>• LED: **Battery** off | |
| | Battery charge is below low battery trigger point | • Operates<br>• LED: **Battery** flashes amber | |
| | Battery charge is exhausted | Computer shuts down | |
| | No Battery installed | • Cannot operate<br>• LED: **Battery** off | |

# Power indicators

As shown in the above table, the **Battery**/**Power** indicators on the system indicator alert you to the computer's operating capability and battery charge status.

## Battery indicator

Check the **Battery** indicator to determine the status of the battery pack. The following indicator lights indicate the battery status:

| | |
|---|---|
| **Flashing amber** | The battery charge is low. The AC adaptor must be connected to recharge the battery. |
| **Amber** | Indicates the AC adaptor is connected and charging the battery. |
| **Green** | Indicates the AC adaptor is connected and the battery is fully charged. |
| **No light** | Under any other conditions, the indicator does not light. |

*If the battery becomes too hot while it is being charged, the charge will stop and the **Battery** indicator will go out. When the battery's temperature falls to a normal range, charge will resume. This occurs whether the computer's power is on or off.*

### Power indicator

Check the **Power** indicator to determine the power status:

| | |
|---|---|
| **Green** | Indicates power is being supplied to the computer and the computer is turned on. |
| **Blinking amber** | Indicates power is being supplied to the computer while the computer is in Sleep Mode. The indicator turns on for two seconds and off for two seconds. |
| **No light** | Under any other conditions, the indicator does not light. |

## Battery types

The computer has the following batteries:

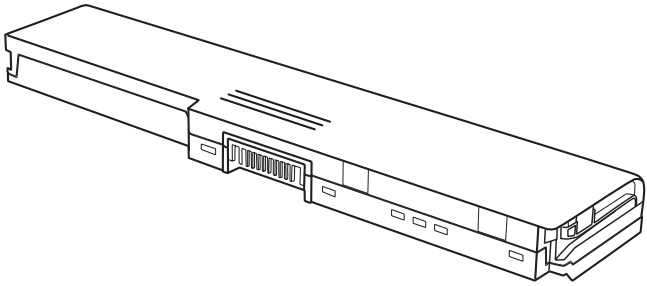
- Battery pack (6cell, or 12cell depending on the model.)
- Real Time Clock (RTC) battery

- *The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by TOSHIBA as replacements.*
- *Do not remove the battery pack while the computer is in Sleep Mode. Data is stored in RAM, so if the computer loses power it will be lost. When the computer is powered off in Sleep Mode, and the AC adaptor is not connected, the main battery pack supplies power to maintain data and programs in memory. If the battery pack is completely discharged, Sleep Mode does not function and the computer loses all data in memory.*

### Battery pack

When the AC adaptor is not connected, the computer's main power source is a removable lithium ion battery pack, also referred to in this manual as the main battery. You can purchase additional battery packs for extended use of the computer away from an AC power source.

Before you remove the battery pack, set the computer to Hibernation Mode or save your data and shut down the computer. Do not change the battery pack while the AC adaptor is connected.



*Battery pack*

To ensure that the battery pack maintains its maximum capacity, operate the computer on battery power at least once a month until the battery pack is fully discharged. Refer to *Extending battery life* in this chapter for procedures. If the computer is continuously operated on AC power through an AC adaptor for an extended period, more than a month, the battery may fail to retain a charge. It may not function efficiently over the expected life of the battery and the **Battery** indicator may not indicate a low-battery condition.

## Real Time Clock battery

The Real Time Clock (RTC) battery provides power for the internal real time clock and calendar. It also maintains the system configuration.

If the RTC battery becomes completely discharged, the system loses this data and the real time clock and calendar stop working.

*The computer's RTC battery is a lithium ion battery and should be replaced only by your dealer or by a TOSHIBA service representative. The battery can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations.*

- *You can change the settings of the Real Time Clock by pressing F2 in POST.*
- *After configuring the time and date for the Real Time Clock battery, we recommend that you turn the power status of your computer to "ON" so that the Real Time Clock battery is charged. Refer to Chapter 9 Troubleshooting, for details.*

The charge in the RTC battery is getting low or has been exhausted. You will need to set the date and time within the BIOS setup using the following steps:

1. Press **F2** key when booting up the computer. - the BIOS setup screen will be displayed.
2. Set the date in **System Date**.
3. Set the time in **System Time**.
4. Press **F10** key. Confirmation message will appear.

Press **ENTER** key. BIOS setup will terminate and the computer will be rebooted.

*After configuring the date and time it is recommended that you switch the computer on and then leave it in this state so that the Real Time Clock battery can be charged.*

# Care and use of the battery pack

The battery pack is a vital component of portable computing. Taking proper care of it will help ensure longer operating time on battery power as well as a longer life for your battery pack. Follow the instructions in this section carefully to ensure safe operation and maximum performance.

## Safety precautions

Mishandling of batteries can cause death, serious injury or property damage. Carefully observe the following advisories:

**Danger:** Indicates an imminently hazardous situation, which could result in death or serious injury, if you do not follow instructions.

**Warning:** Indicates a potentially hazardous situation, which could result in death or serious injury, if you do not follow instructions.

**Caution:** Indicates a potentially hazardous situation, which if not avoided, may result in moderate or minor injury or property damage.

**Note:** Provides important information.

### *Danger*

1. Never try to dispose of the battery pack by burning or expose it to a heating device such as a microwave oven. The battery pack could explode and cause bodily injury.
2. Never try to disassemble, repair or otherwise tamper with a battery pack. The battery pack will overheat and ignite. Leakage of caustic alkaline solution or other electrolytic substances will cause fire or injury, possibly resulting in death or serious injury.
3. Never short-circuit the battery pack by contacting the terminals with a metal object. A short-circuit can cause fire or otherwise damage the battery pack and possibly cause injury. To avoid accidental short-circuit, always wrap the battery pack in plastic and cover the terminals with electrical tape when storing or disposing of the battery pack.
4. Never puncture the battery pack with a nail or other sharp object. Never strike it with a hammer or other object. Never step on it.
5. Never try to charge the battery pack in any manner other than that described in the User's manual. Never connect the battery pack to a plug socket or to an automobile's cigarette lighter socket. It may rupture or ignite.
6. Use only the battery pack supplied with the computer or other device or a battery pack approved by the computer or device's manufacturer. Battery packs have different voltages and terminal polarities. Use of an improper battery could cause smoke, fire or rupture of the battery pack.
7. Never subject a battery pack to heat, such as storage near a heat source. Exposure to heat can cause the battery pack to ignite, explode or leak caustic liquid and cause death or serious injury. It could also fail or malfunction causing data loss.

8. Never expose the battery pack to abnormal shock, vibration or pressure. The battery pack's internal protective device will fail, causing it to overheat, explode, ignite or leak caustic liquids possibly resulting in death or serious injury.
9. Never let a battery pack become wet. A wet battery pack will overheat, ignite or rupture possibly resulting in death or serious injury.

### *Warning*

1. Never allow caustic electrolyte fluid leaked from a battery pack to contact your eyes, skin or clothing. If caustic electrolyte fluid should contact your eyes, immediately wash your eyes with large amounts of running water and seek medical attention, to help prevent eye damage. If electrolyte fluid should contact your skin immediately wash it under running water to prevent rash. If it contacts your clothes, promptly remove them to prevent the fluid from contacting your skin or eyes.
2. Immediately turn off the power, disconnect the AC adaptor and remove the battery if any of the following events are observed in the battery pack: offensive or unusual odor, excessive heat, discoloration or deformation. Never use the computer again until it has been checked by a TOSHIBA service provider. It might generate smoke or fire, or the battery pack might rupture.
3. Make sure the battery is securely installed in the computer before attempting to charge the battery pack. Improper installation could generate smoke or fire, or cause the battery pack to rupture.
4. Keep the battery pack out of reach of infants and children. It can cause injury.

### *Caution*

1. Never continue to use a battery pack after its recharging capacity has become impaired, or after the display of a warning message indicating that the battery pack's power is exhausted. Continued use of an exhausted or impaired battery pack could cause the loss of data.
2. Never dispose of battery packs with normal trash. Bring them to your TOSHIBA dealer or to another recycling centre to save resources and prevent environmental damage. Cover the terminals with electrical tape to prevent short-circuits, which could cause the battery pack to ignite or rupture.
3. Use only battery packs recommended by TOSHIBA as replacements.
4. Always make sure the battery pack is installed correctly and securely. Otherwise, a battery pack could fall out and possibly cause injury.
5. Charge the battery pack only in an ambient temperature between 5 and 35 degrees Celsius. Otherwise, the electrolyte solution might leak, battery pack performance might deteriorate and the battery life might be shortened.

6. Be sure to monitor the remaining battery power. If the battery pack and real time clock battery discharge completely, Sleep Mode will not function and data in memory will be lost. Also, the computer might register an incorrect time and date. In this case, connect the AC adaptor to recharge the batteries.
7. Never install or remove the battery pack without first turning off the power and disconnecting the AC adaptor. Never remove the battery pack while the computer is in Suspend or Sleep Mode. Data will be lost.

### *Note*

1. Never remove the battery pack while the Wake-up on LAN function is enabled. Data will be lost. Before you remove a battery pack, disable the Wake-up on LAN function.
2. After the battery pack is charged, avoid leaving the AC adaptor connected and the computer turned off for more than a few hours at a time. Continuing to charge a fully-charged battery pack can damage the battery.

## Charging the batteries

When the power in the battery pack becomes low, the **Battery** indicator flashes amber indicating that only a few minutes of battery power remain. If you continue to use the computer while the **Battery** indicator flashes, the computer enables Hibernation Mode (so you don't lose data) and automatically turns off.

You must recharge a battery pack when it becomes discharged.

### *Procedures*

To recharge a battery pack while it is installed in the computer, connect the AC adaptor to the **DC IN 19V** jack and plug the other end into a working outlet.

The **Battery** indicator glows amber when the battery is being charged.

*Use only the computer connected to an AC power source to charge the battery pack. Never attempt to charge the battery pack with any other charger.*

### Time

Refer to User Information Guide about Charging time.

*The charging time when the computer is on is affected by ambient temperature, the temperature of the computer and how you use the computer. If you make heavy use of external devices, for example, the battery might scarcely charge at all during operation. Refer also to the section Maximizing battery operating time.*

### Battery charging notice

The battery may not charge right away under the following conditions:

- The battery is extremely hot or cold. If the battery is extremely hot, it might not charge at all. To ensure the battery charges to its full capacity, charge the battery at room temperature of 10° to 30°C (50° to 88°F).
- The battery is nearly completely discharged. Leave the AC adaptor connected for a few minutes and the battery should begin charging.

The **Battery** indicator may show a rapid decrease in battery operating time when you try to charge a battery under the following conditions:

- The battery has not been used for a long time.
- The battery has completely discharged and been left in the computer for a long time.
- A cool battery is installed in a warm computer.

In such case, follow the steps below.

1. Fully discharge the battery by leaving it in the computer with the power on until the power automatically shuts off.
2. Plug in the AC adaptor.
3. Charge the battery until the **Battery** indicator glows green.

Repeat these steps two or three times until the battery recovers normal capacity.

*Leaving the AC adaptor connected will shorten battery life. At least once a month, run the computer on battery power until the battery is fully discharged, then recharge the battery.*

## Monitoring battery capacity

Remaining battery power can be monitored using the following methods.

- Clicking the battery icon on the task bar
- Via the Windows Mobility Center window

- *Wait at least 16 seconds after turning on the computer before trying to monitor the remaining operating time. The computer needs this time to check the battery's remaining capacity and to calculate the remaining operating time, based on the current power consumption rate and remaining battery capacity. The actual remaining operating time may differ slightly from the calculated time.*
- *With repeated discharges and recharges, the battery's capacity will gradually decrease. Therefore, an often used, older battery will not operate for as long as a new battery even when both are fully charged.*

## Maximizing battery operating time

A battery's usefulness depends on how long it can supply power on a single charge.

How long the charge lasts in a battery depends on:

- CPU processing speed (Depends on the model you purchased)
- Screen brightness
- Cooling method (Depends on the model you purchased)
- System Sleep Mode
- System Hibernation Mode
- Monitor power off
- How often and for how long you use the hard disk drive and external disk(c) drives, for example, optical disc and floppy diskette drive.
- How much charge the battery contained to begin with.
- How you use optional devices, such as a USB device, to which the battery supplies power.
- Enabling Sleep Mode conserves battery power if you are frequently turning the computer off and on.
- Where you store your programs and data.
- Closing the display when you are not using the keyboard saves power.
- Operating time decreases at low temperatures.
- The condition of the battery terminals. Make sure the battery terminals stay clean by wiping them with a clean dry cloth before installing the battery pack.

## Retaining data with power off

Refer to User Information Guide about Retaining time.

## Extending battery life

To maximize the life of your battery pack:

- At least once a month, disconnect the computer from a power source and operate it on battery power until the battery pack fully discharges. Before doing so, follow the steps below.
  1. Turn off the computer's power.
  2. Disconnect the AC adaptor and turn on the computer's power. If it does not turn on go to step 4.
  3. Operate the computer on battery power for five minutes. If the battery pack has at least five minutes of operating time, continue operating until the battery pack is fully discharged. If the **Battery** indicator flashes or there is some other warning to indicate a low battery, go to step 4.
  4. Connect the AC adaptor to the computer and the power cord to a power outlet. The **Battery** indicator should glow amber to indicate that the battery pack is being charged. If the **Battery** indicator does not glow, power is not being supplied. Check the connections for the AC adaptor and power cord.
  5. Charge the battery pack until the Battery indicator glows white/green.
- If you have extra battery packs, rotate their use.
- If you will not be using the system for an extended period, more than one month, remove the battery pack.
- Store spare battery packs in a cool dry place out of direct sunlight.

# Replacing the battery pack

Please be aware that the battery pack is classified as a consumable item. The operating life of the battery pack will gradually reduce through repeated charging and discharging, and will need to be replaced when it reaches the end of its operating life. In addition to this, you might also replace a discharged battery pack with a charged spare when you are operating your computer away from an AC power source for an extended period of time.

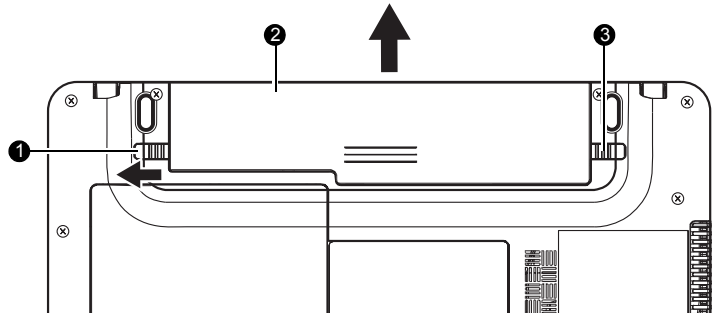
This section explains how to remove and install the battery pack, and begins with the removal process which is detailed through the following steps.

- *When handling battery packs, do not short-circuit the terminals. Also do not drop, hit or otherwise apply impact; do not scratch or break the casing and do not twist or bend the battery pack.*
- *Do not remove the battery pack while the computer is in Sleep Mode. Data is stored in RAM, so if the computer loses power it will be lost.*
- *In Hibernation Mode, data will be lost if you remove the battery or disconnect the AC adaptor before the save is completed. Wait for the **Disk** indicator to go out.*
- *Do not touch the battery release latch while holding the computer or the battery pack might fall out due to the unintentional release of the battery release latch and cause injuries.*

## Removing the battery pack

To remove a discharged battery, follow the steps below.

1. Save your work.
2. Turn the computer's power off. Make sure the **Power** indicator is off.
3. Remove all cables connected to the computer.
4. Close the display panel and turn the computer upside down.
5. Slide and hold the battery release latch to free the battery pack after moving the battery lock into its unlock position - then slide the battery pack out of the computer.




1. Battery Lock
2. Battery
3. Battery Release Latch

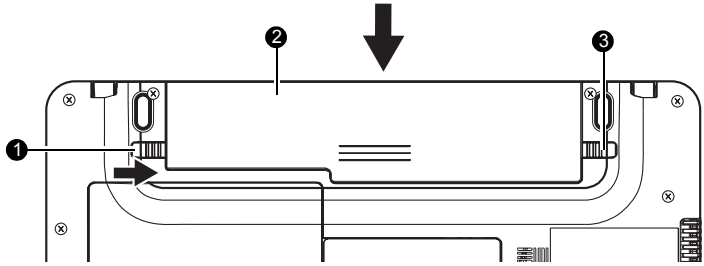
*Releasing the battery pack*

## Installing the battery pack

To install a battery, follow the steps below.

- *The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by TOSHIBA as replacements.*
- *Do not touch the latch while holding the computer. Or you may get injured by the dropped battery by unintentional release of the latch.*

1. Insert the battery pack.
2. Ensure the battery lock is moved into its locked position.




1. Battery Lock
2. Battery pack
3. Battery Release Latch

*Securing the battery pack*

# Starting the computer by password

To start up the computer with the user password, follow these steps:

1. Turn on the power as described in Chapter 3, *Getting Started*. The following message appears:

```
Enter Password [ ]
```

*At this point, the hotkeys **FN** + **F1** to **F9** do not work. They will function after you enter the password.*

2. Enter the password.
3. Press **ENTER**.

*If you enter the password incorrectly three times in a row, the computer shuts off. In this case, you must turn the computer back on to retry password entry.*

# Power-up modes

The computer has the following power-up modes:

- Boot Mode: Computer shuts down without saving data. Always save your work before you turn the computer off in boot mode.
- Hibernation Mode: Data in memory is saved to the hard disk.
- Sleep Mode: Data is maintained in the computer's main memory.

*Refer also to the sections Turning on the power and Turning off the power in Chapter 3, Getting Started.*

## Hot keys

You can use hot keys **FN + F3** to enter Sleep Mode and **FN + F4** to enter Hibernation Mode. Refer to Chapter 5, *The Keyboard* for details.

# Panel power off/on

You can set up your computer so that power turns off automatically when you close the display panel. When you open the panel, power turns on in Sleep Mode or Hibernation Mode but not in boot mode.

*If the panel power off function is enabled and you use Shut down Windows®, do not close the display until the shut down function is completed.*

# System Auto Off

This feature turns the system off automatically if it is not used for a set duration. The system shuts down in Sleep Mode or Hibernation Mode in Windows®.

# Chapter 7

# HW Setup

This chapter explains how to use TOSHIBA HW Setup program to configure your computer. TOSHIBA HW Setup lets you configure settings for General, Password, Display, Boot Priority, Keyboard, LAN, and USB.

## Accessing HW Setup

To run HW Setup, click , **All Programs**, **TOSHIBA**, **Utilities**, **HWSetup**.

## HW Setup Window

The HW Setup window contains the following tabs: General, Password, Display, Boot Priority, Keyboard, USB and LAN .

There are also these three buttons:

| | |
|---|---|
| **OK** | Accepts your changes and closes the HW Setup window. |
| **Cancel** | Closes the window without accepting your changes. |
| **Apply** | Accepts all your changes without closing the HW Setup window. |

### *General*

This window displays the BIOS version and contains two buttons:

| | |
|---|---|
| **Default** | Return all HW Setup values to the factory settings. |
| **About** | Display the HW Setup version. |

### *Setup*

This field displays BIOS Version and date.

## Password

This tab allows you to set or reset the user password for power on.

### User Password

Lets you register a new password or un-register an existing password.

| | |
|---|---|
| **Not Registered** | Un-registers an existing password |
| **Registered** | Register a new password by following the on screen instructions |

### Owner String

This blank field is used to display a message when the password field is displayed on startup. If a password is not registered the message will not be shown. The maximum length is 256 characters.

## Display

This tab lets you select the internal LCD or external monitor when the computer boots up.

### Power On Display

Lets you select the display to be used when the computer is booted (This setting is only available on Standard VGA mode and not available on Windows® Desktop).

| | |
|---|---|
| **Auto-Selected** | Selects an external monitor if one is connected. Otherwise, it selects the internal LCD (Default). |
| **System LCD only** | Irrespective of external display connection, the power on display will be in integrated "LCD only" mode. |

## Boot Priority

### Boot Priority Options

This tab allows you to select the priority for booting the computer.

To select the boot drive you want, follow the steps below.

1. Boot-up your computer and press **F12** to enter the boot menu.
2. The boot select screen will be displayed: HDD, LAN, FDD, CD/DVD, etc.
3. Use the upper/lower cursor keys to highlight the boot device you want and apply.

## Keyboard

### Wake-up on Keyboard

When this feature is enabled and the computer is in Sleep Mode, you can turn on the computer by pressing any key. It is effective only for the internal keyboard and only when the computer is in Sleep Mode.

| | |
|---|---|
| **Enabled** | Enables the Wake-up on Keyboard function. |
| **Disabled** | Disables the Wake-up on Keyboard function (Default). |

## USB

### USB Keyboard/Mouse/FDD Legacy Emulation

Use this option to enable or disable Legacy USB support. If your operating system does not support USB, you can still use a USB mouse, keyboard, and FDD by setting the Legacy USB Support to enable.

## LAN

### Wake-up on LAN

This feature lets the computer's power be turned on from shutdown when it receives a wake-up packet ( Magic packet ) from the LAN.

The Wake-up on LAN from Sleep Mode or Hibernation Mode function is dependent on the setting of OS. (The setting in HW Setup does not affect the setting of OS.)

| | |
|---|---|
| **Enabled** | Enables Wake-up on LAN from shutdown. |
| **Disabled** | Disables Wake-up on LAN from shutdown. (Default) |

*Do not install or remove an optional memory module while Wake-up on LAN is enabled.*

*Wake-up on LAN does not work without the AC adaptor. Leave it connected, if you are using this feature.*

### Built-in LAN

This feature enables or disables the Built-in LAN.

| | |
|---|---|
| **Enabled** | Enables Built-in LAN function (Default). |
| **Disabled** | Disables Built-in LAN function. |

*To access BIOS setup menu, press **F2** when booting up the computer.*

# Chapter 8

# Optional Devices

Optional devices can expand the computer's capabilities and its versatility. This chapter describes connection or installation of the following devices, which are available from your TOSHIBA dealer:

### *Cards/memory*

- Secure Digital™ (SD) Card (SD memory card, SDHC memory card, miniSD Card, microSD Card)
- Memory Stick™ (Memory Stick, Memory Stick PRO, Memory Stick PRO Duo)
- xD-Picture Card™
- MultiMediaCard™
- Additional memory module

### *Power devices*

- Additional battery pack
- Additional AC adaptor

### *Peripheral devices*

- External monitor

### *Other*

- Security lock

# Bridge media slot

The computer is equipped with a bridge media slot that can accommodate SD/SDHC/MMC/Memory Stick/Memory Stick Pro memory cards. These memory cards let you easily transfer data from devices, such as digital cameras and Personal Digital Assistants, which use flash-memory.

| Card Type | Capacities |
|---|---|
| SD | up to 2GB |
| SDHC | up to 16GB |
| MMC | up to 2GB |
| Memory Stick | up to 128MB, 256MB (128MB x 2) |
| Memory Stick Pro | up to 4GB |
| xD-Picture Card | up to 2GB |

- Keep foreign objects out of the memory card slot. A pin or similar object can damage the computer's circuitry.
- *Do not format a memory card with Windows® as it might result in that card not being able to be used with some peripheral devices.*
- *Please note that an adaptor is required to use miniSD/microSD Card.*
- *Please note that an adaptor is required to use Memory Stick PRO Duo.*
- *The card is designed so that it can be inserted only one way. Do not try to force the card into the slot.*
- *For more details on using memory cards, see manuals accompanying the cards.*
- *The slot does not support Magic Gate functions.*

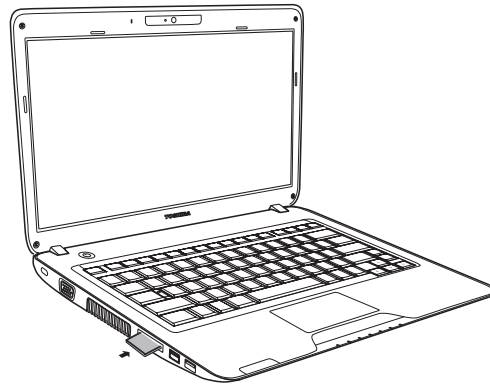
- *The Logo of SD memory card is SD.*
- *The Logo of SDHC memory card is SDHC.*
- *To use a micro or mini SD card, an SD adaptor is required.*
- *Please note that not all memory media have been tested and verified to work correctly. Therefore, it is not possible to guarantee that all memory media will operate properly.*

## Installing a memory card

To install a memory card:

1. Insert the memory card.
2. Press gently to ensure a firm connection.

*Inserting a memory card (Satellite T130, Satellite Pro T130, PORTEGE T130)*



*Inserting a memory card (Satellite T110, Satellite Pro T110, PORTEGE T110)*

*Be sure the memory card is oriented properly before you insert it.*

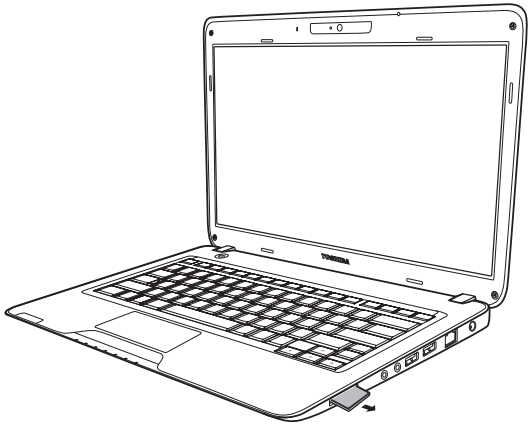
*If Windows® fails to read the card, remove it then re-insert it.*

- *The bridge media slot only accepts one type of card at a time. Do not attempt to install more than one card as you risk damaging either the cards themselves or the computer.*

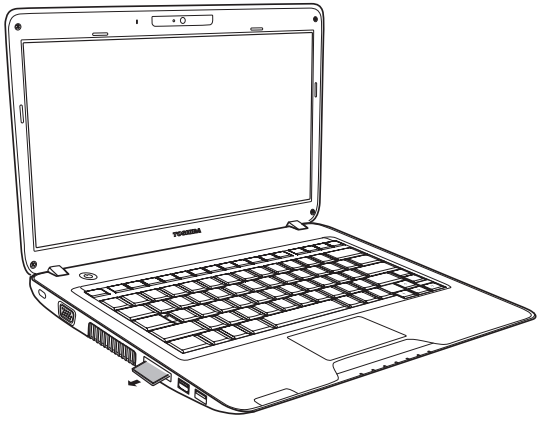
## Removing a memory card

To remove a memory card, follow the steps below:

1. Click the **Safely Remove Hardware** icon on the Taskbar.
2. Select a device, then click the **Stop** button. A confirmation dialog may appear, depending on how the device is registered with the system; if so, confirm that you want to remove the device.
3. Gently press the memory card inside the socket to eject it.
4. Grasp the card and remove it.



*Removing a memory card (Satellite T130, Satellite Pro T130, PORTEGE T130)*



*Removing a memory card (Satellite T110, Satellite Pro T110, PORTEGE T110)*

- *Make sure the memory card indicator is out before you remove the card or turn off the computer's power. If you remove the card or turn off the power while the computer is accessing the card you may lose data or damage the card.*
- *Do not remove the card while the computer is in Sleep or Hibernation mode. The computer could become unstable or data in the memory card could be lost.*
- *Do not turn off or place the computer into either Sleep Mode or Hibernation Mode while data is being transferred to or from the memory card. The system may become unstable or data in the memory card may be lost.*

## Memory card care

*Set the write-protect switch to the lock position, if you do not want to record data.*

1. Do not write to a memory card if the battery power is low. Low power could affect writing accuracy.
2. Do not remove a memory card while read/write is in progress.
3. The memory card is designed so that it can be inserted only one way. Do not try to force the card into the slot.
4. Do not leave a memory card partially inserted in the slot. Press the memory card until you hear it click into place.
5. Do not twist or bend memory cards.
6. Do not expose memory cards to liquids or store in humid areas or lay media close to containers of liquid.
7. After using a memory card, return it to its case.
8. Do not touch the metal part or expose it to liquids or let it get dirty.

# Memory expansion

You can install additional memory in the computer's memory module socket to increase the amount of RAM. This section describes how to install and remove a memory module.

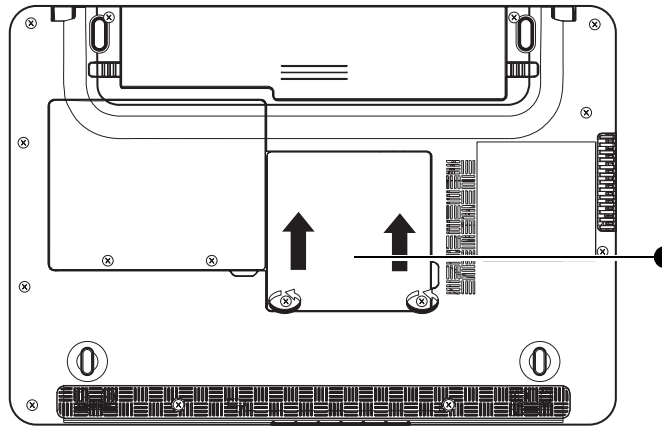
- *Use only memory modules approved by TOSHIBA.*
- *Do not try to install or remove a memory module under the following conditions. You can damage the computer and the module. Also, data will be lost.*
  a. *The computer is turned on.*
  b. *The computer was shut down using the Sleep Mode or Hibernation Mode.*
- *When incorrect memory is inserted, please refer to Memory expansion section in Chapter 9, Troubleshooting, for details.*
- *Expansion memory is a precision electronic component that may be fatally damaged by static electricity. Since the human body has slight static electricity, be sure to discharge static electricity from your body before installing an expansion memory module. To discharge your body's static electricity, simply touch any metal close to you with bare hands.*

*Use a point size 1 Phillips screwdriver to remove and fasten the screws. Use of an incorrect screwdriver can damage the screw heads.*

## Installing a memory module

Follow the steps below to install a memory module.

1. Set the computer to boot mode and turn off the power.
2. Remove all cables connected to the computer.
3. Turn the computer upside down and remove the battery pack (refer to Chapter 6, *Power and Power-Up Modes*).
4. Loosen the screws securing the memory module cover.
5. Slide your fingernail or a thin object under the cover and lift it off.




1. Memory Module Cover

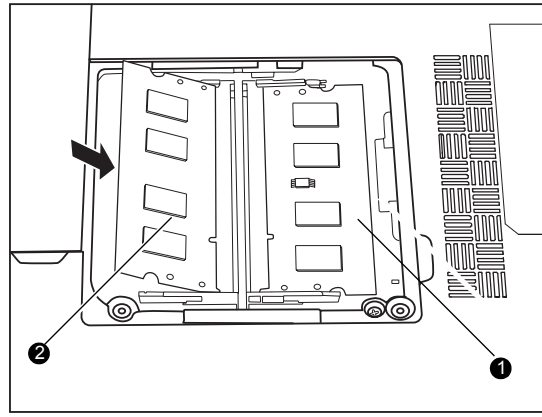
*Removing the memory module cover*

6. Lift one side of the insulator sheet and fit the module's connectors into the computer's connectors at about a 30 degree angle. Press the module carefully to ensure a firm connection.

*Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.*

*Slot A is reserved for main memory. Use slot B for expanded memory. If only one card is installed use slot A.*

7. Push the module down so it lies flat. Latches on either side will click into place to secure the module.




1. Slot A
2. Slot B

*Installing the memory module*

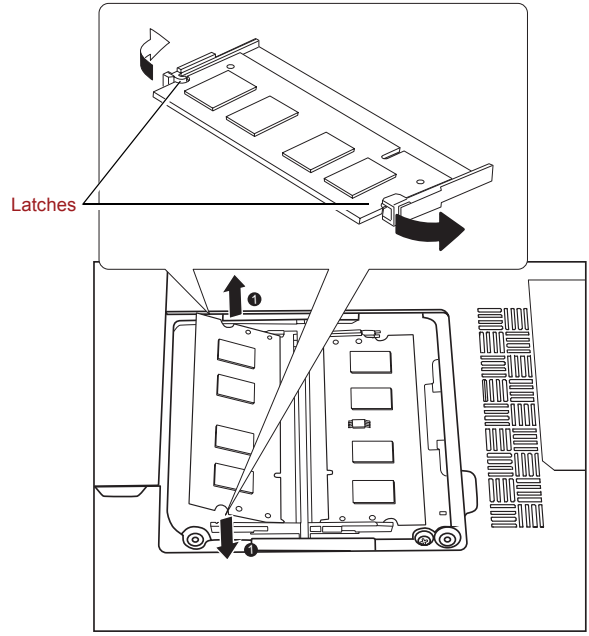
8. Seat the cover and secure it with the screws.
9. Replace the battery pack as described in Chapter 6, *Power and Power-Up Modes*.
10. Turn the power on and make sure the added memory is recognized. Open **System** in the Control Panel and click the **General** tab.

## Removing a memory module

To remove the memory module, make sure the computer is in boot mode then:

1. Be sure the power is off and all cables are disconnected from the computer.
2. Turn the computer upside down and remove the battery and the screws securing the memory module cover.
3. Slide your fingernail or a thin object under the cover and lift it off.
4. Lift one side of the insulator and push the latches to the outside to release the module. A spring will force one end of the module up.
5. Grasp the module by the sides and pull it out.

- *If you use the computer for a long time, the memory modules will become hot. In this case, let the memory modules cool to room temperature before you replace them. Or you will get burnt if you touch any of them.*
- *Do not touch the connectors on the memory module or on the computer. Debris on the connectors may cause memory access problems.*




*Removing the memory module*

6. Seat the cover and secure it with screws and replace the battery pack.

## Additional battery pack

You can increase the portability of the computer with additional battery packs. If you're away from an AC power source and your battery runs low, you can replace it with a freshly charged battery. Refer to Chapter 6, *Power and Power-Up Modes*.

## Additional AC adaptor

If you frequently transport the computer between different sites such as your home and office, purchasing an AC adaptor for each location will reduce the weight and bulk of your carrying load.

# External monitor

An external analog monitor can be connected to the external monitor port on the computer. Refer to Appendix B, *Display Controller*. The computer supports several video modes. To connect a monitor, follow the steps below.

1. Turn the computer off.
2. Connect the monitor to the external monitor port.
3. Turn the monitor's power on.
4. Turn the computer on.

When you turn on the power, the Windows® Bootup screen (Windows® Logo) appears on the display device.

However, the Windows® Desktop appears on a display device that you used last time to shut down your PC, if the display device exists when you turn on the power.

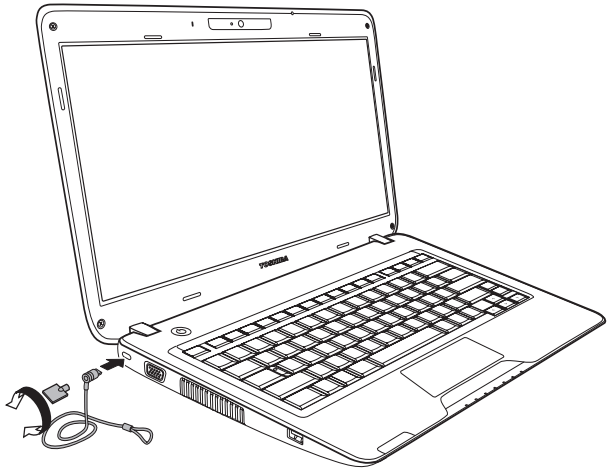
To change the display settings, press **FN+F5**. If you disconnect the monitor before you turn the computer off, be sure to press **FN+F5** to switch to the internal display. Refer to Chapter 5, *The Keyboard*, for details on using hot keys to change the display setting.

# Security lock

Security locks enable you to anchor your computer to a desk or other heavy object to help prevent unauthorized removal of the computer.

The computer has a security lock slot on the left side. Attach one end of the cable to a desk and the other end to the security lock slot.

1. Turn the computer so the left side faces you.
2. Align the holes for the security lock and attach the lock.



*Security lock*

# Chapter 9

# Troubleshooting

TOSHIBA designed the computer for durability. However, should problems occur, following the procedures in this chapter can help to determine the cause.

All readers should become familiar with this chapter. Knowing what might go wrong can help prevent problems from occurring.

## Problem solving process

Resolving problems will be much easier if you observe the following guidelines:

- Stop immediately when you recognize a problem exists. Further action may result in data loss or damage. You may destroy valuable problem related information that can help solve the problem.
- Observe what is happening. Write down what the system is doing and what actions you performed immediately before the problem occurred. If you have a printer attached, print a copy of the screen using PrtSc.

The questions and procedures offered in this chapter are meant as a guide, they are not definitive problem solving techniques. Many problems can be solved simply, but a few may require help from your dealer. If you find you need to consult your dealer or others, be prepared to describe the problem in as much detail as possible.

## Preliminary checklist

Consider the simplest solution first. The items in this checklist are easy to fix and yet can cause what appears to be a serious problem.

- Make sure you turn on all peripheral devices before you turn on the computer. This includes your printer and any other external device you are using.
- Before you attach an external device, turn the computer off. When you turn the computer back on it recognizes the new device.
- Make sure all options are set properly in the setup program.
- Check all cables. Are they correctly and firmly attached? Loose cables can cause signal errors.
- Inspect all connecting cables for loose wires and all connectors for loose pins.

Make notes of your observations and keep them in a permanent error log. This will help you describe your problems to your dealer. If a problem recurs, the log will help you identify the problem faster.

## Analyzing the problem

Sometimes the system gives clues that can help you identify why it is malfunctioning. Keep the following questions in mind:

- Which part of the system is not operating properly: keyboard, hard disk drive, optical media drive, display. Each device produces different symptoms.
- Is the operating system configuration set properly? Check the configuration options.
- What appears on the display screen? Does it display any messages or random characters? Print a copy of the screen if you have a printer attached. Look up the messages in the software and operating system documentation. Check that all connecting cables are correctly and firmly attached. Loose cables can cause erroneous or intermittent signals.
- Do any indicators light? Which ones? What color are they? Do they stay on or blink? Write down what you see.
- Do you hear any beeps? How many? Are they long or short? Are they high pitched or low? Is the computer making any unusual noises? Write down what you hear.

Record your observations so you can describe them to your dealer.

| | |
|---|---|
| Software | The problems may be caused by your software or disc. If you cannot load a software package, the media may be damaged or the program might be corrupted. Try loading another copy of the software.<br>If an error message appears while you are using a software package, check the software documentation. These documents usually include a problem solving section or a summary of error messages.<br>Next, check any error messages in the operating system documentation. |
| Hardware | If you cannot find a software problem, check your hardware.<br>First run through the items in the preliminary checklist above. If you still cannot correct the problem, try to identify the source. The next section provides checklists for individual components and peripherals. |

# Hardware and system checklist

This section discusses problems caused by your computer's hardware or attached peripherals. Basic problems may occur in the following areas:

- System start-up
- Self test
- Power
- Real Time Clock
- Keyboard
- LCD panel
- Hard disk drive
- Recovery Media
- Pointing device
- USB
- Memory expansion
- Sound system
- Monitor
- LAN
- Wireless LAN

## System start-up

When the computer does not start properly, check the following items:

- Self Test
- Power Sources
- Power-on Password

## Self test

When the computer starts up, the self test will be run automatically, and the following will be displayed:

```
TOSHIBA
Leading Innovation >>>
```

This message remains on the screen for a few seconds.

If the self test is successful, the computer tries to load the operating system, depending on how the Boot Priority is set in the TOSHIBA HW Setup program.

If any of the following conditions are present, the self test failed:

- The computer stops and does not proceed to display information or messages except the TOSHIBA logo.
- Random characters appear on the screen, and the system does not function normally.
- The screen displays an error message.

Turn off the computer and check all cable connections. If the test fails again, contact your dealer.

## Power

When the computer is not plugged into an AC outlet, the battery pack is the primary power source. However, your computer has a number of other power resources, including an intelligent power supply and a Real Time Clock battery. These resources are interrelated and any one could affect apparent power problems. This section provides checklists for AC power and the battery. If you cannot resolve a problem after following them, the cause could lie with another power resource. In such a case, contact your dealer.

### *Overheating power down*

If the computer's internal temperature becomes too high, the computer will automatically enter Hibernation Mode or Sleep Mode and shut down. If the computer has reached room temperature and still does not start, or if it starts but shuts down quickly contact your dealer.

## AC power

If you have trouble turning on the computer with the AC adaptor connected, check the **Battery** indicator. Refer to Chapter 6, *Power and Power-Up Modes* for more information.

| Problem | Procedure |
|---|---|
| AC adaptor doesn't power the computer | Check the connections. Make sure the cord is firmly connected to the computer and a power outlet. |
| | Check the condition of the cord and terminals. If the cord is frayed or damaged, replace it. If the terminals are soiled, wipe them with cotton or a clean cloth. |
| | If the AC adaptor still does not power the computer, contact your dealer. |

## Battery

If you suspect a problem with the battery, check the **Battery** indicator. For information on indicator and battery operation refer to Chapter 6, *Power and Power-Up Modes*.

| Problem | Procedure |
|---|---|
| Battery doesn't power the computer | The battery may be discharged. Connect the AC adaptor to charge the battery. |
| Battery doesn't charge when the AC adaptor is attached (**Battery** indicator does not glow amber.) | If the battery is completely discharged, it will not begin charging immediately. Wait a few minutes.<br>If the battery still does not charge, make sure the outlet of the AC adaptor is supplying power.<br>Test it by plugging in an appliance. |
| | Check whether the battery is hot or cold to the touch. If the battery is too hot or too cold, it will not charge properly. Let it reach room temperature. |

| Problem | Procedure |
|---|---|
| | Unplug the AC adaptor and remove the battery to make sure the terminals are clean. If necessary wipe them with a soft dry cloth dipped in alcohol.<br>Connect the AC adaptor and replace the battery. Make sure it is securely seated.<br>Check the **Battery** indicator. If it does not glow, let the computer charge the battery for at least 20 minutes. If the **Battery** indicator glows after 20 minutes, let the battery continue to charge at least another 20 minutes before turning on the computer.<br>If the indicator still does not glow, the battery may be at the end of its operating life. Replace it.<br>If you do not think the battery is at the end of its operating life, see your dealer. |
| Battery doesn't power the computer as long as expected | If you frequently recharge a partially charged battery, the battery might not charge to its full potential. Fully discharge the battery, then try to charge it again. |
| | Check the power consumption settings in the Power Options. Consider using a power saving feature. |

## Disposing of PC and PC batteries

- Discard this PC in accordance with applicable laws and regulations. For further information, contact your local government.
- This PC contains rechargeable batteries. After repeated use, the batteries will finally lose their ability to hold a charge and you will need to replace them. Under certain applicable laws and regulation, it may be illegal to dispose of old batteries by placing them in the trash.
- Please be kind to our shared environment. Check with your local government authority for details regarding where to recycle old batteries or how to dispose of them properly. This product contains mercury. Disposal of this material may be regulated due to environmental considerations. For disposal, reuse or recycling information, please contact your local government.
- If your hard disk or other storage media contains sensitive data, you should be aware that standard deletion procedures do not remove data from the media. These standard deletion procedures include:
- Selecting Delete for a target file
- Putting files in the Recycle Bin and emptying the Recycle Bin

- Reformatting the media
- Reinstalling an operating system from the recovery media or HDD.

  The procedures above delete only the initial part of the data used for file management. This makes the file invisible to the operating system, but the data can still be read by specialized utilities. If you dispose of the PC, please delete all the data on its hard disk drive. Doing so prevents unauthorized use of such data. To ensure your data is not used for unauthorized purposes, you can:
- Physically destroy the hard disk drive
- Use a proven specialized utility to overwrite all data
- Take the hard disk drive to a professional deletion service

## Real Time Clock

| Problem | Procedure |
|---|---|
| The BIOS setting and system date/time are lost. | Charge in the RTC battery is exhausted or getting low. You will need to set the date and time in the BIOS setup screen using the following procedure<br>1. Press **F2** key. BIOS setup will boot up.<br>2. Set the date in **System Date**.<br>3. Set the time in **System Time**.<br>4. Press **F10** key. Confirmation message will appear.<br>5. Press **ENTER** key. BIOS setup will terminate and the computer will be rebooted. |

*After configuring the time and date for the Real Time Clock battery, we recommend that you turn the power status of your computer to "ON" so that the Real Time Clock battery is charged.*

## Keyboard

Keyboard problems can be caused by your setup configuration. For more information refer to Chapter 5, *The Keyboard*.

| Problem | Procedure |
|---|---|
| Some letter keys produce numbers | Check that the numeric keypad overlay is not selected. Press **FN + F11** and try typing again. |
| Output to screen is garbled | Make sure the software you are using is not remapping the keyboard. Remapping involves reassigning the meaning of each key. Refer to your software's documentation.<br>If you are still unable to use the keyboard, consult your dealer. |

## LCD panel

Apparent LCD problems may be related to the computer's setup.

| Problem | Procedure |
|---|---|
| No display | Press hot keys **FN + F5** to change the display priority, to make sure it is not set for an external monitor. |
| Problems above remain unresolved or other problems occur | Refer to your software's documentation to determine if the software is causing the difficulty. |
| | Run the diagnostic test.<br>Contact your dealer if the problems continue. |

*Intel® Display Power Saving Technology:*

*Your model may include the Intel® Display Power Saving Technology feature that can save the computer's power consumption by optimizing picture contrast on the internal LCD. This feature can be used if the computer is:*

- *configured with GS45 Express chipset**
- *running under battery mode*
- *using the internal LCD display only*

*The power and performance settings can be adjusted in the Intel® graphics utility.*

*To access this utility, go to*

***Control Panel → Hardware and Sound → Display → Change display Settings → Advanced settings → Intel® Graphics Media Accelerator Driver for Mobile → Graphics Properties → Display Settings → Power Settings → Modify Settings → Intel® Display Power Saving Technology***

*If you want to improve the picture quality under the conditions mentioned above, adjust the setting towards Maximum Quality or disable this feature.*

**Please visit your region's web site or refer to the catalog for the configuration details of the model that you have purchased.*

## Hard disk drive

| Problem | Procedure |
|---|---|
| Computer does not boot from hard disk drive | There may be a problem with your operating system files. Refer to your operating system documentation. |
| Slow performance | Your files may be fragmented. Run disk Defragmenter to check the condition of your files and disk. Refer to your operating system documentation or online help for information on running disk Defragmenter. |
| | As a last resort, reformat the hard disk. Then, reload the operating system and other files.<br>If problems persist, contact your dealer. |

## Recovery Media

| Problem | Procedure |
|---|---|
| The following message appears when executing Recovery Media Creator.<br>"The Recovery Media Creator can not be launched because there is no recovery partition." | You will see this message if you have previously chosen to remove the partition and are trying to create "Recovery Media". When there is no recovery partition, the Recovery Media Creator cannot make Recovery Media. However, if you have already created a "Recovery Media", you can use it to restore the recovery partition.<br>Simply follow the instructions in "Restoring the preinstall software from your creating Recovery Media" section in this manual. You will be directed to select "Restore Original Factory Image" from the drop-down menu. If you have not created "Recovery Media", please contact TOSHIBA support for assistance. |

## Pointing device

If you are using a USB mouse, also refer to the USB section in this chapter and to your mouse documentation.

### *Touch Pad*

| Problem | Procedure |
|---|---|
| On-screen pointer does not respond to Pad operation | The system might be busy. If the pointer is shaped as an hourglass, wait for it to return to its normal shape and try again to move it. |
| Double-tapping does not work | Try changing the double-click speed setting in the mouse control utility.<br>1. To access this utility, click , **Control Panel**, **Hardware and Sound**, then **Mouse**.<br>2. Wihtin the Mouse Properties window, click the **Buttons** tab.<br>3. Set the double-click speed as required and click **OK**. |
| The mouse pointer moves too fast or too slow | Try changing the speed setting in the mouse control utility.<br>1. To access this utility, click , **Control Panel**, **Hardware and Sound**, then **Mouse**.<br>2. Within the Mouse Properties window, click the **Pointer Options** tab.<br>3. Set the pointer speed as required and click **OK**. |
| The response of the Touch Pad is too sensitive | Adjust the touch sensitivity.<br>1. Click , **Control Panel**, **Hardware and Sound**, then **Mouse**.<br>2. Within the Mouse Properties window, click the **Device setting** tab or **Advanced** tab.<br>3. Adjust the touch sensitivity under these tabs. |

### *USB mouse*

| Problem | Procedure |
|---|---|
| On-screen pointer does not respond to mouse operation | The system might be busy. If the pointer is shaped as an hourglass, wait for it to resume its normal shape and try again to move it. |
| | Make sure the mouse is properly connected to the USB port. |

| Problem | Procedure |
|---|---|
| Double-clicking does not work | Try changing the double-click speed setting in the mouse control utility.<br>1. To access this utility, click , **Control Panel**, **Hardware and Sound**, then **Mouse**.<br>2. Wihtin the Mouse Properties window, click the **Buttons** tab.<br>3. Set the double-click speed as required and click **OK**. |
| The mouse pointer moves too fast or too slow | Try changing the speed setting in the mouse control utility.<br>1. To access this utility, click , **Control Panel**, **Hardware and Sound**, then **Mouse**.<br>2. Within the Mouse Properties window, click the **Pointer Options** tab.<br>3. Set the pointer speed as required and click **OK**. |
| The mouse pointer moves erratically | The mouse might be dirty. Refer to your mouse documentation for instructions on cleaning.<br>If problems persist, contact your dealer. |

## USB

Also refer to your USB device's documentation.

| Problem | Procedure |
|---|---|
| USB device does not work | Check for a firm cable connection between the USB ports on the computer and the USB device. |
| | Make sure the USB device drivers are properly installed. Refer to your Windows® 7 documentation for information on checking the drivers.<br>If problems persist, contact your dealer. |

## USB Sleep and Charge function

| Problem | Procedure |
|---|---|
| I cannot use the "USB Sleep and Charge function". | The setting of "USB Sleep and Charge function" may be disabled.<br>Check the "USB Sleep and Charge" check box to enable this function in the TOSHIBA USB Sleep and Charge Utility. |
| | When there is a current overflow of the external device connected to the compatible port, USB bus power (DC5V) supply may be stopped for safety reasons. If this happens, disconnect the external device if one is connected. After that, turn the power of the computer ON/OFF to restore the function. If this function can not be still used even if only one external device is connected, stop using the external device because its current is over the acceptable value of this computer. |
| | Some external devices may not be able to use the "USB Sleep and Charge function." In this case, please try one or more of the following methods.<br>■ Change the Power supply mode settings in the TOSHIBA USB Sleep and Charge Utility.<br>■ Turn OFF the computer while external devices are connected.<br>If this function can not be still used, uncheck the "USB Sleep and Charge" check box in the TOSHIBA USB Sleep and Charge Utility and stop using the function. |
| The battery depletes quickly even when I have turned OFF the power of the computer. | If USB Sleep and Charge function is enabled, the computer's battery will discharge during hibernation or when the computer is turned off. Connect the AC adaptor to the computer or uncheck the "USB Sleep and Charge" check box to disable this function in the TOSHIBA USB Sleep and Charge Utility. |

| Problem | Procedure |
|---|---|
| External devices connected to the compatible ports do not work. | Some external devices may not work when connected to a compatible port when the "USB Sleep and Charge function" is enabled in the TOSHIBA USB Sleep and Charge Utility.<br>Reconnect the external device after turning ON the computer.<br>If the external device still does not work, connect the device to an USB port that does not have the USB Sleep and Charge function-compatible icon (⚡) or uncheck the "USB Sleep and Charge" check box to disable this function in the TOSHIBA USB Sleep and Charge Utility. |
| The "USB WakeUp function" does not work | When "USB Sleep and Charge function" is enabled in the TOSHIBA USB Sleep and Charge Utility, the "USB WakeUp function" does not work for ports that support the USB Sleep and Charge function.<br>In that case, use an USB port that does not have the USB Sleep and Charge function-compatible icon (⚡) or uncheck the "USB Sleep and Charge" check box to disable this function in the TOSHIBA USB Sleep and Charge Utility. |

## Memory expansion

Refer also to Chapter 8, *Optional Devices*, for information on installing memory modules.

| Problem | Procedure |
|---|---|
| The computer hangs up | Make sure the memory module installed in the expansion slot is compatible with the computer.<br>If an incompatible module has been installed, follow the steps below.<br>1. Turn off the power.<br>2. Disconnect the AC adaptor and all peripheral devices.<br>3. Remove the battery pack.<br>4. Remove the memory module.<br>5. Replace the battery pack and/or connect the AC adaptor.<br>6. Turn on the power.<br>If problems persist, contact your dealer. |

## Sound system

Refer also to documentation for your audio devices.

| Problem | Procedure |
|---|---|
| No sound is heard | Check the software volume settings. |
| | Make sure the headphone connection is secure. If problems persist, contact your dealer. |

## Monitor

Refer also to Chapter 8, *Optional Devices*, and to your monitor's documentation.

| Problem | Procedure |
|---|---|
| Monitor does not turn on | Make sure that the external monitor's power switch is on. Confirm that the external monitor's power cable is plugged into a working power outlet. |
| No display | Try adjusting the contrast and brightness controls on the external monitor. |
| | Press hot keys **FN + F5** to change the display priority and make sure it is not set for the internal display. |
| Display error occurs | Check that the cable connecting the external monitor to the computer is attached firmly.<br>If problems persist, contact your dealer. |

## LAN

| Problem | Procedure |
|---|---|
| Cannot access LAN | Check for a firm cable connection between the LAN jack and the LAN hub.<br>If problems persist, consult your LAN administrator. |

## Wireless LAN

If the following procedures do not restore LAN access, consult your LAN administrator. For more information on wireless communication, refer to Chapter 4, *Operating Basics*.

| Problem | Procedure |
|---|---|
| Cannot access Wireless LAN | Make sure the computer's wireless communication service is turned on.<br>If problems persist, contact your LAN administrator. |

## Bluetooth

For more information on wireless communication, refer to Chapter 4, *Operating Basics*.

| Problem | Procedure |
|---|---|
| Cannot access Bluetooth device | Make sure the computer's wireless communication service is turned on.<br>Make sure the Bluetooth Manager is running and the power to the Bluetooth device is turned on.<br>Make sure no optional Bluetooth adaptors are installed in the computer. The built-in Bluetooth function and an optional Bluetooth Adpater cannot operate simultaneously.<br>If problems persist, contact your dealer. |

## SD/MuliMedia Card

Refer also to Chapter 8, *Optional Devices*,.

| Problem | Procedure |
|---|---|
| Memory card error occurs | Reseat the memory card to make sure it is firmly connected.<br>Check the card's documentation. |
| You cannot write to the memory card | Make sure the card is not write protected. |
| You cannot read a file | Make sure the target file is on the memory card inserted in the slot.<br>If problems persist, contact your dealer. |

## Using Windows® XP Mode on your Windows® 7 computer (available on certain models)

Your computer supports virtualization technology that enables you to run Windows XP-compatible applications on your Windows 7 computer. This gives you the flexibility to continue using legacy applications while still benefiting from Windows 7 improvements.

Virtual Windows XP Mode is supported only on systems running Windows 7 Professional and Windows 7 Ultimate.

To take advantage of virtual Windows XP Mode, you may need to enable the Virtualization Technology setting in your computer's BIOS (Basic Input/Output System). To check this setting and enable it if necessary, do the following:

1. Start or restart your computer while pressing the **F2** key. The BIOS settings screen displays.
2. Select the **Advanced** menu.
3. Set "Intel® Virtualization Technology" to Enable.
4. Restart the computer.

Some models are equipped with a "Virtualization Technology".

For more information on running Windows XP Mode on your Windows 7 system, please visit Microsoft's Web site at www.microsoft.com/windows/virtual-pc.

# TOSHIBA support

If you require any additional help using your computer or if you are having problems operating the computer, you may need to contact TOSHIBA for additional technical assistance.

## Before you call

Some problems you experience may be related to software or the operating system, it is important to investigate other sources of assistance first. Before contacting TOSHIBA, try the following:

- Review troubleshooting sections in the documentation for software and peripheral devices.
- If a problem occurs when you are running software applications, consult the software documentation for troubleshooting suggestions. Call the software company's technical support for assistance.
- Consult the dealer you purchased your computer and/or software from. They are your best sources for current information and support.

## Where to write

If you are still unable to solve the problem and suspect that it is hardware related, write to TOSHIBA at the nearest location listed on the below.

| Outside of Europe | In Europe |
|---|---|
| **Australia**<br>TOSHIBA Australia Pty. Ltd.<br>Information Systems Division<br>Building C, 12-24 Talavera Rd,<br>North Ryde, 2113, NSW, Australia | **Germany & Austria**<br>TOSHIBA Europe (I.E.) GmbH<br>Geschäftsbereich,<br>Deutschland-Österreich<br>Hammfelddamm8,<br>D-41460 Neuss, Germany |
| **Canada**<br>TOSHIBA of Canada Ltd.<br>191 McNabb Street,<br>Markham, Ontario<br>L3R 8H2 | **France**<br>TOSHIBA Systèms France S.A.<br>7, Rue Ampère B.P. 131,<br>92804 Puteaux Cedex |
| **China**<br>TOSHIBA Personal Computer &<br>Network (Shanghai) Co., Ltd.<br>10F, BEA Finance Tower, No.66<br>Hua Yuan Shi Qiao Road, Pudong,<br>Shanghai, P.R.China 200120 | **Netherlands**<br>TOSHIBA Information Systems,<br>Benelux B.V.<br>Rivium Boulevard<br>41 2909 LK Capelle a/d IJssel |
| **Singapore**<br>TOSHIBA Singapore Pte. Ltd.<br>438B Alexandra Road #06-01<br>Alexandra Technopark<br>Singapore 119968 | **Spain**<br>TOSHIBA Information Systems,<br>ESPAÑA<br>Parque Empresarial San Fernando<br>Edificio Europa, 1a Planta,<br>Escalera A 28830 Madrid |
| **United States of America**<br>TOSHIBA America Information<br>Systems, Inc.<br>9740 Irvine Boulevard<br>Irvine, California 92618<br>USA | **United Kingdom**<br>TOSHIBA Information Systems<br>(U.K.) Ltd.<br>TOSHIBA Court<br>Weybridge Business Park<br>Addlestone Road<br>Weybridge, Surrey KT15 2UL |
| **India**<br>TOSHIBA India Pvt Ltd.<br>PC Division<br>6th Floor, DR Gopal Das Bhawan<br>Barakhamba Road, Delhi-110001,<br>India | **The Rest of Europe**<br>TOSHIBA Europe (I.E.) GmbH<br>Geschäftsbereich,<br>Deutschland-Österreich<br>Hammfelddamm 8,<br>D-41460 Neuss, Germany |

# Appendix A

# Specifications

This appendix summarizes the computer's technical specifications.

## Physical Dimensions

Refer to User Information Guide about Size.

## Environmental Requirements

| | Operating | Non-operating |
|---|---|---|
| **Ambient temperature** | 5°C to 35°C | -20°C to 60°C |
| **Thermal gradient** | 15°C per hour maximum | 20°C per hour maximum |
| **Relative humidity (non condensing)** | 20% to 80% | 10% to 90% |
| **Altitude (from sea level)** | 0 to 3,000 meters | -60 to 10,000 meters |

### *Power Requirements*

| | |
|---|---|
| **AC adaptor** | 100-240 volts AC<br>50 or 60 hertz (cycles per second) |
| **Computer** | 19 VDC<br>3.42 amperes |

# Appendix B

# Display Controller

## Display controller

The display controller interprets software commands into hardware commands that turn particular pels on or off.

A high-resolution external monitor connected to the computer can display up to 1920 horizontal and 1200 vertical pixels at 16 M colors. (Depends on the model you purchased.)

The display controller also controls the video mode, which uses industry standard rules to govern the screen resolution and the maximum number of colors that can be displayed on screen.

Software written for a given video mode will run on any computer that supports the mode.

The computer's display controller supports all VGA modes, the most widely used industry standards.

*Some of display modes might not be supported depending on the external monitor which you use.*

# Appendix C

# Wireless LAN

This appendix is intended to help you get your Wireless LAN network up and running, with a minimum of parameters.

## Card Specifications

| | |
|---|---|
| **Form Factor** | PCI Express Mini Card |
| **Compatibility** | ■ IEEE 802.11 Standard(Revision b and g) for Wireless LANs<br>■ Wi-Fi (Wireless Fidelity) certified by the Wi-Fi Alliance.<br>The "Wi-Fi CERTIFIED" logo is a certification mark of the Wi-Fi Alliance. |
| **Network Operating System** | ■ Microsoft® Windows® Networking |
| **Media Access Protocol** | ■ CSMA/CA (Collision Avoidance) with Acknowledgement (ACK) |

*The Wireless LAN feature is not available on all models.*

# Radio Characteristics

Radio Characteristics of Wireless LAN Cards may vary according to:

- Country/region where the product was purchased
- Type of product

Wireless communication is often subject to local radio regulations. Although Wireless LAN wireless networking products have been designed for operation in the license-free 2.4GHz band, local radio regulations may impose a number of limitations to the use of wireless communication equipment.

*Refer to the sheet "Information to the User" for regulatory information that may apply in your country/region.*

| | |
|---|---|
| **Radio Frequency** | ■ Band 2.4GHz (2400-2483.5 MHz) (Revision b/g and n* draft 2.0) |
| **Modulation Technique** | ■ DSSS-CCK, DSSS-DQPSK, DSSS-DBPSK (IEEE 802.11b)<br>■ OFDM-BPSK, OFDM-QPSK, OFDM-16QAMOFDM-16QAM (IEEE 802.11g) |

* Depends on the installed Wireless LAN module.

The range of the wireless signal is related to the transmit rate of the wireless communication. Communications at a lower transmission rate may travel larger distances.

- The range of your wireless devices can be affected when the antennas are placed near metal surfaces and solid high-density materials.
- Range is also impacted due to "obstacles" in the path of the radio that may either absorb or reflect the radio signal.

# Supported Frequency Sub-bands

Subject to the radio regulations that apply in the countries/regions, your Wireless LAN card may support a different set of 2.4 GHz channels. Consult your Authorized Wireless LAN or TOSHIBA Sales office for information about the radio regulations that apply in the countries/regions.

## 2.4GHz Band Channels Sets (Wireless IEEE 802.11 Revision b, g and n draft 2.0)

| Frequency Range<br>**Channel ID** | 2400-2483.5 MHz |
|---|---|
| 1 | 2412 |
| 2 | 2417 |
| 3 | 2422 |
| 4 | 2427 |
| 5 | 2432 |
| 6 | 2437 |
| 7 | 2442 |
| 8 | 2447 |
| 9 | 2452 |
| 10 | **2457** |
| 11 | 2462 |
| 12 | **2467*1** |
| 13 | **2472*1** |

*1 Check, if these channels can be used in your country/region.

When installing Wireless LAN cards, the channel configuration is managed as follows:

- For wireless clients that operate in a Wireless LAN Infrastructure, the Wireless LAN card will automatically start operation at the channel identified by the Wireless LAN Access Point. When roaming between different access points the station can dynamically switch to another channel if required.
- In a Wireless LAN Access Point, the Wireless LAN card will use the factory-set default channel (printed in bold), unless the LAN Administrator selected a different channel when configuring the Wireless LAN Access Point device.

# Appendix D

## AC Power Cord and Connectors

The power cord's AC input plug must be compatible with the various international AC power outlets and the cord must meet the standards for the country/region in which it is used. All cords must meet the following specifications:

| | |
|---|---|
| **Length:** | Minimum 1.7 meters |
| **Wire size:** | Minimum 0.75 $mm^2$ |
| **Current rating:** | Minimum 2.5 amperes |
| **Voltage rating:** | 125 or 250 VAC (depending on country/region's power standards) |

### Certification agencies

| | |
|---|---|
| **U.S. and Canada:** | UL listed and CSA certified<br>No. 18 AWG, Type SVT or SPT-2 |
| **Australia:** | AS |
| **Japan:** | DENANHO |

***Europe:***

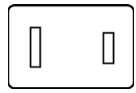
| | | | |
|---|---|---|---|
| **Austria:** | OVE | **Italy:** | IMQ |
| **Belgium:** | CEBEC | **The Netherlands:** | KEMA |
| **Denmark:** | DEMKO | **Norway:** | NEMKO |
| **Finland:** | FIMKO | **Sweden:** | SEMKO |
| **France:** | LCIE | **Switzerland:** | SEV |
| **Germany:** | VDE | **United Kingdom:** | BSI |

In Europe, power cords must be VDE type, H05VVH2-F and two conductor.

For the United States and Canada, plug configuration must be a 2-15P (250 V) or 1-15P (125 V) as designated in the U.S. National Electrical code handbook and the Canadian Electrical Code Part II.

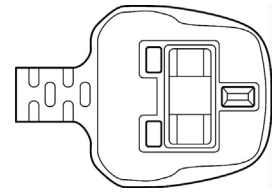
The following illustrations show the plug shapes for the U.S.A. and Canada, the United Kingdom, Australia and Europe.

**USA**



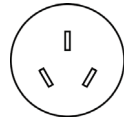
UL approved

**United Kingdom**



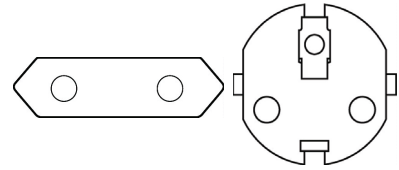
BS approved

**Australia**



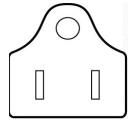
AS approved

**Europe**



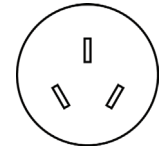
Approved by the appropriate agency

**Canada**



CSA approved

**China**



CCC approved

# Appendix E

## TOSHIBA PC Health Monitor

The TOSHIBA PC Health Monitor software program monitors computer system functions such as power consumption, the cooling system and HDD Drop sensor. It alerts users of specific system conditions via pop-up messages. It also tracks the usage of the computer and related devices, logging the service relevant information on the computer's hard disk drive.

- The collected information includes device operation time and number of actuations or status changes (i.e.: number of power button and FN key combination uses, AC adaptor, battery, LCD, fan, HDD, sound volume, wireless communication switch, TOSHIBA Express Port Replicator and USB information), date of initial system use, and also computer and device usage (i.e.: power settings, battery temperature and recharging, CPU, memory, backlight illumination time, and temperatures for various devices), property (e.g., product name, model number, part number, serial number, BIOS version, FW version) of the system and components (e.g., Video device, Sound device, Network device, Hard Disk drive, Solid State drive, Optical Disc drive),operating system and software information (e.g., OS version, OS install date, Direct X version, Internet Explorer version, installed update program and driver lists). The stored data uses a very small portion of the total hard disk capacity, approximately 10MB or less per year.
- This information is used to identify and provide a notification of system conditions which may effect the performance of your Toshiba computer. It may also be used to help diagnose problems should the computer require service by Toshiba or Toshiba's authorized service providers. Additionally, Toshiba may also use this information for quality assurance analysis. Subject to the use restrictions above, the HDD data logged may be transferred to entities located outside of your country or region of residence (e.g., European Union). Those countries may or may not have the same data protection laws or data protection levels as required by your home country or region.
- Once enabled, you may disable the TOSHIBA PC Health Monitor at any time by uninstalling the software via **Uninstall a program** in the **Control Panel**. Doing so will automatically delete all collected information from the HDD.
- The TOSHIBA PC Health Monitor software does not extend or modify

Toshiba's obligations under its standard limited warranty in any way. Toshiba's standard limited warranty terms and limitations apply.

# Starting the TOSHIBA PC Health Monitor

The TOSHIBA PC Health Monitor can be started using the following methods:

- **Click Start → All Programs → TOSHIBA → Utilities → PC Health Monitor**.
- Click the icon in the notification area, then click the "**Click here to enable TOSHIBA PC Health Monitor**." message when it is displayed. (*)

No matter which method is used, the TOSHIBA PC Health Monitor explanation screen will be displayed.

Clicking "**Next**" will display the "**TOSHIBA PC Health Monitor Software Notice & Acceptance**" screen. Please carefully read the information displayed. Selecting "**ACCEPT**" and clicking "**OK**" will enable the program. By enabling the TOSHIBA PC Health Monitor software, you agree with these terms and conditions and to the use and sharing of the collected information. Once the program is enabled, the TOSHIBA PC Health Monitor screen is displayed, and the program will begin monitoring system functions and collecting information.

(*) This message will no longer be displayed after clicking "**ACCEPT**" or "**DECLINE**" on the "**TOSHIBA PC Health Monitor Software Notice & Acceptance**" screen.

# If a TOSHIBA PC Health Monitor message is displayed

A message will be displayed if any changes which may interfere with the operation of the program are detected.

* If a message is displayed, follow the instructions displayed on screen.

# Appendix F

# Legal Footnotes

This chapter states the Legal Footnotes information applicable to TOSHIBA computers. In the text in this manual, *XX is used to show which Legal Footnotes description is related to TOSHIBA computers.

Description(s) related to this computer are marked with a blue *XX in this manual. Clicking on *XX will display the related description.

## Non-applicable Icons*1

Certain computer chassis are designed to accommodate all possible configurations for an entire product series. Therefore, please be aware that your selected model may not have all the features and specifications corresponding to all of the icons or switches shown on the computer chassis.

## CPU*2

Central Processing Unit ("CPU") Performance Legal Footnotes.

CPU performance in your computer product may vary from specifications under the following conditions:

- use of certain external peripheral products
- use of battery power instead of AC power
- use of certain multimedia, computer generated graphics or video applications
- use of standard telephone lines or low speed network connections
- use of complex modeling software, such as high end computer aided design applications
- use of several applications or functionalities simultaneously
- use of computer in areas with low air pressure (high altitude >1,000 meters or >3,280 feet above sea level)

- use of computer at temperatures outside the range of 5°C to 30°C (41°F to 86°F) or >25°C (77°F) at high altitude (all temperature references are approximate and may vary depending on the specific computer model - please refer to your computer documentation or visit the TOSHIBA website at http://www.pcsupport.toshiba.com for details).

CPU performance may also vary from specifications due to design configuration.

Under some conditions, your computer product may automatically shutdown. This is a normal protective feature designed to reduce the risk of lost data or damage to the product when used outside recommended conditions. To avoid risk of lost data, always make back-up copies of data by periodically storing it on an external storage medium. For optimum performance, use your computer product only under recommended conditions. Read additional restrictions in your product documentation. Contact TOSHIBA technical service and support, refer to *TOSHIBA support* section in Chapter 9 *Troubleshooting* for more information.

### 64-Bit Computing

64-bit processors are designed to take advantage of 32 and 64 bit computing.

64-bit computing requires that the following hardware and software requirements are met:

- 64-bit Operating System
- 64-bit CPU, Chipset and BIOS (Basic Input/Output System)
- 64-bit Device drivers
- 64-bit applications

Certain device drivers and/or applications may not be compatible with a 64-bit CPU and therefore may not function properly. A 32-bit version of the operating system is preinstalled on your computer unless explicitly stated that the operating system is 64-bit.

## Memory (Main System)*3

Part of the main system memory may be used by the graphics system for graphics performance and therefore reduce the amount of main system memory available for other computing activities. The amount of main system memory allocated to support graphics may vary depending on the graphics system, applications utilized, system memory size and other factors. Computers configured with a 32-bit operating system can address up to 3GB of system memory. Only computers configured with a 64-bit operating system can address 4GB or more of system memory.

## Battery Life*4

Battery life may vary considerably depending on product model, configuration, applications, power management settings and features utilized, as well as the natural performance variations produced by the design of individual components. Published battery life numbers are achieved on select models and configurations tested by TOSHIBA at the time of publication. Recharge time varies depending on usage. Battery may not charge while computer is consuming full power.

After going through many charge and discharge cycles, the battery will lose its ability to perform at maximum capacity and will need to be replaced. This is a normal phenomenon for all batteries. To purchase a new battery pack, see the accessories information that is shipped with your computer.

## Hard Disk Drive (HDD) Capacity*5

1 Gigabyte (GB) means $10^9$ = 1,000,000,000 bytes using powers of 10. The computer operating system, however, reports storage capacity using powers of 2 for the definition of 1 GB = $2^{30}$ = 1,073,741,824 bytes, and therefore shows less storage capacity. Available storage capacity will also be less if the product includes one or more pre-installed operating systems, such as Microsoft Windows and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

## LCD*6

Over a period of time, and depending on the usage of the computer, the brightness of the LCD screen will deteriorate. This is an intrinsic characteristic of LCD technology.

Maximum brightness is only available when operating in AC power mode. The screen will dim when the computer is operated on battery power and you may not be able to increase the brightness of the screen.

## Graphics Processor Unit ("GPU")*7

Graphics processor unit ("GPU") performance may vary depending on product model, design configuration, applications, power management settings and features utilized. GPU performance is only optimized when operating in AC power mode and may decrease considerably when operating in battery power mode.

Total Available Graphics Memory is the total of, as applicable, Dedicated Video Memory, System Video Memory and Shared System Memory.

Shared System Memory will vary depending on system memory size and other factors.

## Wireless LAN*8

The transmission speed over the wireless LAN and the distance over which wireless LAN can reach may vary depending on surrounding electromagnetic environment, obstacles, access point design and configuration, and client design and software/hardware configurations.

The actual transmission speed will be lower than the theoretical maximum speed.

The wireless adapter is based on a draft 2.0 release version of the IEEE 802.11n specification and; may not be full compatible with, or support some feature (e.g., security) of, certain Wi-Fi equipment.

## Copy Protection

Applicable copy protection standards included in certain media may prevent or limit recording or viewing of the media.

## Images

All images are simulated for purposes of illustration.

## USB Sleep and Charge

The "USB Sleep and Charge function" may not work with certain external devices even if they are compliant with the USB specification. In those cases, turn the power of the computer ON to change the device.

# Glossary

The terms in this glossary cover topics related to this manual. Alternate naming is included for reference.

***Abbreviations***

***AACS:*** advanced access content system
***AC:*** Alternating current
***ACPI:*** Advanced Configuration and Power Interface
***AMT:*** Intel Active Management Technology
***ASCII:*** American Standard Code for Information Interchange
***BIOS:*** basic input/output system
***bps:*** bits per second
***CD:*** compact disc
***CD-ROM:*** Compact Disc Read-Only Memory
***CD-RW:*** Compact Disc-ReWritable
***CMOS:*** complementary metal-oxide semiconductor
***CPU:*** central processing unit
***CRT:*** cathode ray tube
***DC:*** direct current
***DDC:*** display data channel
***DDR:*** double data rate
***DIMM:*** dual inline memory module
***DVD:*** digital versatile disc
***DVD-R:*** Digital Versatile Disc-Recordable
***DVD-RAM:*** Digital Versatile Disc-Random Access Memory
***DVD-R (Dual Layer):*** Digital Versatile Disc Recordable Dual Layer
***DVD-ROM:*** Digital Versatile Disc-Read Only Memory
***DVD-RW:*** Digital Versatile Disc-ReWritable
***DVD+R (Double Layer):*** Digital Versatile Disc Recordable Double Layer
***FDD:*** floppy diskette drive
***FIR:*** fast infrared
***GB:*** gigabyte
***HDD:*** hard disk drive
***HDCP:*** high-bandwidth digital content protection
***HDMI:*** high definition multimedia interface

***HDMI-CEC:*** high definition multimedia interface consumer electronics control
***IDE:*** integrated drive electronics
***IEEE:*** Institute of Electrical and Electronics Engineers
***IMSM:*** Intel Matrix Storage Manager
***I/O:*** input/output
***IRQ:*** interrupt request
***KB:*** kilobyte
***LAN:*** local area network
***LCD:*** liquid crystal display
***LED:*** light emitting diode
***MB:*** megabyte
***MMC:*** multi media card
***OCR:*** optical character recognition (reader)
***PC:*** personal computer
***PCI:*** peripheral component interconnect
***RAM:*** random access memory
***RGB:*** red, green, and blue
***ROM:*** read only memory
***RTC:*** real time clock
***S/P DIF:*** Sony/Philips Digital Interface Format
***SDRAM:*** synchronous dynamic random access memory
***SLI:*** Scalable Link Interface
***SO-DIMM:*** small-outline dual in line memory module
***SSD:*** Solid state drive
***TFT:*** thin-film transistor
***USB:*** Universal Serial Bus
***UXGA:*** ultra extended graphics array
***VGA:*** video graphics array
***WAN:*** wide area network
***WSXGA:*** wide super extended graphics array
***WSXGA+:*** wide super extended graphics array plus
***WUXGA:*** Wide Ultra Extended Graphics Array
***WXGA:*** wide extended graphics array
***WXGA+:*** wide extended graphics array plus
***XGA:*** extended graphics array

# A:

**adaptor:** A device that provides a compatible connection between two units. For example, the computer's internal display adaptor receives information from the software and translates it into images on the screen. An adaptor can take a number of forms, from a microprocessor to a simple connector: An intelligent adaptor (one that is capable of doing some processing) may also be called a controller.

**alphanumeric:** Keyboard characters including letters, numbers and other symbols, such as punctuation marks or mathematical symbols.

**alternating current (AC):** Electric current that reverses its direction of flow at regular intervals.

**analog signal:** A signal whose characteristics such as amplitude and frequency vary in proportion to (are an analog of) the value to be transmitted. Voice communications are analog signals.

**application:** A group of programs that together are used for a specific task such as accounting, financial planning, spreadsheets, word processing and games.

**ASCII:** American Standard Code for Information Interchange. ASCII code is a set of 256 binary codes that represent the most commonly used letters, numbers, and symbols.

# B:

**backup:** A copy of a file, usually on a removable disk, kept in case the original file is lost or damaged.

**binary:** The base two number system composed of zeros and ones (off or on), used by most digital computers. The right-most digit of a binary number has a value of 1, the next a value of 2, then 4, 8, 16, and so on. For example, the binary number 101 has a value of 5. See also ASCII.

**BIOS:** Basic Input/Output System. The firmware that controls data flow within the computer. See also firmware.

**bit:** Derived from “binary digit”, the basic unit of information used by the computer. It is either zero or one. Eight bits is one byte. See also byte.

**Bluetooth:** A short-range radio technology designed to simplify wireless communication among computers, communication devices and the Internet.

**board:** A circuit board. An internal card containing electronic components, called chips, which perform a specific function or increase the capabilities of the system.

**boot:** Short for bootstrap. A program that starts or restarts the computer. The program reads instructions from a storage device into the computer's memory.

**boot disk:** See system disk.

**bootable disk:** See system disk.

**bps:** Bits per second. Typically used to describe the data transmission speed of a modem.

**buffer:** The portion of the computer's memory where data is temporarily stored. Buffers often compensate for differences in the rate of flow from one device to another.

**bus:** An interface for transmission of signals, data or electric power.

**byte:** The representation of a single character. A sequence of eight bits treated as a single unit; also the smallest addressable unit within the system.

# C:

**cache memory:** A section of very fast memory in which frequently used information is duplicated for quick access. Accessing data from cache is faster than accessing it from the computer's main memory. See also L1 cache, L2 cache.

**capacity:** The amount of data that can be stored on a magnetic storage device such as a floppy diskette or hard disk drive. It is usually described in terms of kilobytes (KB), where one KB = 1024 bytes, megabytes (MB), where one MB = 1024 KB and gigabytes (GB), where one GB = 1024 MB.

**CardBus:** An industry standard bus for 32-bit PC Cards.

**CD:** An individual compact disc. See also CD-ROM.

**CD-R:** A Compact Disc-Recordable disc can be written once and read many times. See also CD-ROM.

**CD-ROM:** A Compact Disc Read-Only Memory is a high capacity disc that can be read from but not written to. The CD-ROM drive uses a laser, rather than magnetic heads, to read data from the disc.

**CD-RW:** A Compact Disc-ReWritable disc can be rewritten many times. See also CD-ROM.

**character:** Any letter, number, punctuation mark, or symbol used by the computer. Also synonymous with byte.

**chassis:** The frame containing the computer.

**chip:** A small semiconductor containing computer logic and circuitry for processing, memory, input/output functions and controlling other chips.

**Click:** To press and release the pointing device's primary button without moving the pointing device. In the Windows® operating system, this refers to the pointing device's left button, unless otherwise stated. See also double-click.

**CMOS:** Complementary Metal-Oxide Semiconductor. An electronic circuit fabricated on a silicon wafer that requires very little power. Integrated circuits implemented in CMOS technology can be tightly packaged and are highly reliable.

**cold start:** Starting a computer that is currently off (turning on the power).

**COM1, COM2, COM3 and COM4:** The names assigned to the serial and communication ports.

**commands:** Instructions you enter at the terminal keyboard that direct the actions of the computer or its peripheral devices.

**compatibility:** 1) The ability of one computer to accept and process data in the same manner as another computer without modifying the data or the media upon which it is being transferred. 2) the ability of one device to connect to or communicate with another system or component.

**components:** Elements or parts (of a system) which make up the whole (system).

**computer program:** A set of instructions written for a computer that enable it to achieve a desired result.

**computer system:** A combination of hardware, software, firmware, and peripheral components assembled to process data into useful information.

**configuration:** The specific components in your system (such as the terminal, printer, and disk drives) and the settings that define how your system works. You use the HW Setup program to control your system configuration.

**controller:** Built-in hardware and software that controls the functions of a specific internal or peripheral device (e.g. keyboard controller).

**CPU:** Central Processing Unit. The portion of the computer that interprets and executes instructions.

**CRT:** Cathode Ray Tube. A vacuum tube in which beams projected on a fluorescent screen-producing luminous spots. An example is the television set.

**cursor:** A small, blinking rectangle or line that indicates the current position on the display screen.

# D:

**data:** Information that is factual, measurable or statistical that a computer can process, store, or retrieve.

**data bits:** A data communications parameter controlling the number of bits (binary digits) used to make up a byte. If data bits = 7 the computer can generate 128 unique characters. If data bits = 8 the computer can generate 256 unique characters.

**DC:** Direct Current. Electric current that flows in one direction. This type of power is usually supplied by batteries.

**default:** The parameter value automatically selected by the system when you or the program do not provide instructions. Also called a preset value.

**delete:** To remove data from a disk or other data storage device. Synonymous with erase.

**device driver:** A program (called a “driver”) that permits a computer to communicate with a device.

**dialog box:** A window that accepts user input to make system settings or record other information.

**disable:** To turn a computer option off. See also enable.

**disk drive:** The device that randomly accesses information on a disk and copies it to the computer's memory. It also writes data from memory to the disk. To accomplish these tasks, the unit physically rotates the disk at high speed past a read-write head.

**disk storage:** Storing data on magnetic disk. Data is arranged on concentric tracks much like a phonograph record.

**display:** A CRT, LCD, or other image producing device used to view computer output.

**documentation:** The set of manuals and/or other instructions written for the users of a computer system or application. Computer system documentation typically includes procedural and tutorial information as well as system functions.

**double click:** To press and release the pointing device's primary button rapidly twice without moving the pointing device. In the Windows® operating system, this refers to the pointing device's left button, unless otherwise stated.

**driver:** A software program, generally part of the operating system, that controls a specific piece of hardware (frequently a peripheral device such as a printer or mouse).

**DVD:** An individual digital versatile (or video) disc. See also DVD-ROM.

**DVD-R (+R, -R):** A Digital Versatile Disc-Recordable disk can be written once and read many times. The DVD-R drive uses a laser to read data from the disc.

**DVD-RAM:** A Digital Versatile Disc-Random Access Memory is a high capacity, high performance disc that lets you store large volumes of data. The DVD-ROM drive uses a laser to read data from the disc.

**DVD-ROM:** A Digital Versatile Disc-Read Only Memory is a high capacity, high performance disc suitable for play back of video and other high-density files. The DVD-ROM drive uses a laser to read data from the disc.

**DVD-RW (+RW, -RW):** A Digital Versatile Disc-ReWritable disc can be rewritten many times.

## E:

**echo:** To send back a reflection of the transmitted data to the sending device. You can display the information on the screen, or output it to the printer, or both. When a computer receives back data it transmitted to a CRT (or other peripheral device) and then transmits the data to printer, the printer is said to echo the CRT.

**enable:** To turn on a computer option. See also disable.

**erase:** See delete.

**escape:** 1) A code (ASCII code 27), signaling the computer that what follows are commands; used with peripheral devices such as printers and modems.
2) A means of aborting the task currently in progress.

**escape guard time:** A time before and after an escape code is sent to the modem which distinguishes between escapes that are part of the transmitted data, and escapes that are intended as a command to the modem.

**execute:** To interpret and execute an instruction.

## F:

**fast infrared:** An industry standard that enables cableless infrared serial data transfer at speeds of up to 4 Mbps.

**file:** A collection of related information; a file can contain data, programs, or both.

**fingerprint sensor:** The fingerprint sensor compares and analyzes the unique characteristics in a fingerprint.

**firmware:** A set of instructions built into the hardware which controls and directs a microprocessor's activities.

**flash memory:** Non-volatile memory that can be written to as well as read. Information in flash memory remains whether or not the computer is receiving power. This type of memory is used to retain your fingerprint data. See also memory. Compare RAM and ROM.

**floppy diskette:** A removable disk that stores magnetically encoded data.

**floppy diskette drive (FDD):** An electromechanical device that reads and writes to floppy diskettes.

**folder:** An icon in Windows used to store documents or other folders.

**format:** The process of readying a blank disk for its first use. Formatting establishes the structure of the disk that the operating system expects before it writes files or programs onto the disk.

**function keys:** The keys labeled F1 through F12 that tell the computer to perform certain functions.

# G:

**gigabyte (GB):** A unit of data storage equal to 1024 megabytes. See also megabyte.

**graphics:** Drawings, pictures, or other images, such as charts or graphs, to present information.

# H:

**hard disk:** A storage device composed of a rigid platter or platters that can be magnetically coded with data. Hard disks hold much more information than diskettes and are used for long-term storage of programs and data. The primary (or only) hard disk in a computer is usually fixed, but some computers have secondary hard disks that are removable. By default, the hard disk is referred to as drive C.

**hard disk drive (HDD):** An electromechanical device that reads and writes a hard disk. See also hard disk.

**hardware:** The physical electronic and mechanical components of a computer system: typically, the computer itself, external disk drives, etc. See also software and firmware.

**hertz:** A unit of wave frequency that equals one cycle per second.

**host computer:** The computer that controls, regulates, and transmits information to a device or another computer.

**hot key:** The computer's feature in which certain keys in combination with the extended function key, FN, can be used to set system parameters, such as speaker volume.

**HW Setup:** A TOSHIBA utility that lets you set the parameters for various hardware components.

# I:

**icon:** A small graphic image displayed on the screen or in the indicator panel. In Windows, an icon represents an object that the user can manipulate.

**i.LINK (IEEE1394):** This port enables high-speed data transfer directly from external devices such as digital video cameras.

**input:** The data or instructions you provide to a computer, communication device or other peripheral device from the keyboard or external or internal storage devices. The data sent (or output) by the sending computer is input for the receiving computer.

**instruction:** Statements or commands that specify how to perform a particular task.

**interface:** 1) Hardware and/or software components of a system used specifically to connect one system or device to another.
2) To physically connect one system or device to another to exchange information.
3) The point of contact between user, the computer, and the program, for example, the keyboard or a menu.

**interrupt request:** A signal that gives a component access to the processor.

**I/O:** Input/output. Refers to acceptance and transfer of data to and from a computer.

**I/O devices:** Equipment used to communicate with the computer and transfer data to and from it.

# K:

**K:** Taken from the Greek word kilo, meaning 1000; often used as equivalent to 1024, or 2 raised to the 10th power. See also byte and kilobyte.

**keyboard:** An input device containing switches that are activated by manually pressing marked keys. Each keystroke activates a switch that transmits a specific code to the computer. For each key, the transmitted code is, in turn, representative of the (ASCII) character marked on the key.

**kilobyte (KB):** A unit of data storage equal to 1024 bytes. See also byte and megabyte.

# L:

**L1 cache:** Level one cache. Memory cache built into the processor to help improve processing speed. See also cache memory, L2 cache.

**L2 cache:** Memory cache installed on the motherboard to help improve processing speed. It is slower than L1 cache and faster than main memory. See also cache memory, L1 cache.

**LAN:** A group of computers or other devices dispersed over a relatively limited area and connected by a communications link that enables any device to interact with any other on the network.

**Light Emitting Diode (LED):** A semiconductor device that emits light when a current is applied.

**Liquid Crystal Display (LCD):** Liquid crystal sealed between two sheets of glass coated with transparent conducting material. The viewing-side coating is etched into character forming segments with leads that extend to the edge of the glass. Applying a voltage between the glass sheets.

# M:

**main board:** See motherboard.

**megabyte (MB):** A unit of data storage equal to 1024 kilobytes. See also kilobyte.

**megahertz:** A unit of wave frequency that equals 1 million cycles per second. See also hertz.

**memory:** Typically refers to the computer's main memory, where programs are run and data is temporarily stored and processed. Memory can be volatile and hold data temporarily, such as RAM, or it can be nonvolatile and hold data permanently, such as ROM. A computer's main memory is RAM. See RAM, ROM.

**menu:** A software interface that displays a list of options on the screen. Also called a screen.

**microprocessor:** A hardware component contained in a single integrated circuit that carries out instructions. Also called the central processing unit (CPU), one of the main parts of the computer.

**mode:** A method of operation, for example, the Boot Mode, Sleep Mode or the Hibernation Mode.

**modem:** Derived from modulator/demodulator, a device that converts (modulates) digital data for transmission over telephone lines and then converts modulated data (demodulates) to digital format where received.

**monitor:** A device that uses rows and columns of pixels to display alphanumeric characters or graphic images. See also CRT.

**motherboard:** A name sometimes used to refer to the main printed circuit board in processing equipment. It usually contains integrated circuits that perform the processor's basic functions and provides connectors for adding other boards that perform special functions.

# N:

**network:** A collection of computers and associated devices that are connected by communications facilities. A network allows you to share data and peripheral devices, such as printers, with other users and to exchange electronic mail.

**non-system disk:** A disk for storing programs and data that cannot be used to start the computer. Compare system disk.

**nonvolatile memory:** Memory that is capable of permanently storing information. Turning the computer's power off does not alter data stored in nonvolatile memory.

**numeric keypad overlay:** A feature that allows you to use certain keys on the keyboard to perform numeric entry, or to control cursor and page movement.

# O:

**OCR:** Optical Character Recognition (reader). A technique or device that uses laser or visible light to identify characters and input them into a storage device.

**online state:** A functional state of a peripheral device when it is ready to receive or transmit data.

**operating system:** A group of programs that controls the basic operation of a computer. Operating system functions include interpreting programs, creating data files, and controlling the transmission and receipt (input/output) of data to and from memory and peripheral device.

**output:** The results of a computer operation. Output commonly indicates data.
1) printed on paper, 2) displayed at a terminal, 3) sent through the serial port of internal modem, or 4) stored on some magnetic media.

# P:

**parallel:** Processes that occur simultaneously. In communications, it means the transmission of more than one bit of information at a time. On your computer, the parallel port provides a parallel communications interface between the computer and an appropriate device. Compare serial.

**parity:** 1) The symmetrical relationship between two parameter values (integers) both of which are either on or off; odd or even; 0 or 1.
2) In serial communications, an error detection bit that is added to a group of data bits making the sum of the bits even or odd. Parity can be set to none, odd, or even.

**password:** A unique string of characters used to identify a specific user. The computer provides various levels of password protection such as user and supervisor.

**PC card:** A credit-card-sized expansion card designed to increase the capabilities of notebook computers. PC Cards provide functions such as modem, fax/modem, hard disk drive, network adaptor, sound card, or SCSI adaptor.

**PCI:** Peripheral Component Interconnect. An industry standard 32-bit bus.

**peripheral:** Any device, such as a printer or joystick, that is attached to the computer and controlled by the computer's CPU.

**pixel:** A picture element. The smallest dot that can be made on a display or printer. Also called a pel.

**plug and play:** A capability with Windows that enables the system to automatically recognize connections of external devices and make the necessary configurations in the computer.

**pointing device:** Any device, such as the Touch Pad or a mouse, that enables you to move the cursor on the screen.

**port:** The electrical connection through which the computer sends and receives data to and from devices or other computers.

**Power Saver:** A TOSHIBA utility that lets you set the parameters for various power-saving functions.

**program:** A set of instructions a computer can execute that enables it to achieve a desired result. See also application.

**prompt:** A message the computer provides indicating it is ready for or requires information or an action from you.

# R:

**Radio frequency interference (RFI) shield:** A metal shield enclosing the printed circuit boards of the printer or computer to prevent radio and TV interference. All computer equipment generates radio frequency signals. The FCC regulates the amount of signals a computing device can allow past its shielding. A Class A device is sufficient for office use. Class B provides a more stringent classification for home equipment use. TOSHIBA portable computers comply with Class B computing device regulations.

**Random Access Memory (RAM):** Volatile memory that can be written to as well as read. Volatile here means that information in RAM is lost when you turn off your computer. This type of memory is used for your computer's main memory. See also memory. Compare ROM.

**resolution:** A measure of the sharpness of the images that can be produced by a printer or displayed on a screen. For a printer, resolution is expressed in dots per inch (dpi). For a screen, it is expressed as the number of pixels available horizontally and vertically

**restart:** Resetting a computer without turning it off (also called “warm boot”, “soft reset” or “reboot”). See also boot.

**RGB:** Red, green, and blue. A device that uses three input signals, each activating an electron gun for a primary additive color (red, green, and blue) or port for using such a device. See also CRT.

**RJ45:** A modular LAN jack.

**Read Only Memory (ROM):** Non-volatile memory that can be read but not written to. Non-volatile here means that information in ROM remains whether or not the computer is receiving power. This type of memory is used to store your computer's BIOS, which is essential instructions the computer reads when you start it up. See also BIOS, memory. Compare RAM.

# S:

**S/P DIF:** A standard of digital interface for audio.

**SCSI:** Small Computer System Interface is an industry standard interface for connection of a variety of peripheral devices.

**SD/SDHC Card:** Secure Digital cards are flash memory widely used in a variety of digital devices such as digital cameras and Personal Digital Assistants.

**serial:** Processes that occur one at a time. In communications, it means the transmission of one bit at a time sequentially over a single channel. On your computer, the serial port provides a serial interface between the computer and an appropriate device. Compare parallel.

**SIO:** Serial Input/Output. The electronic methodology used in serial data transmission.

**soft key:** Key combinations that emulate keys on the IBM keyboard, change some configuration options, stop program execution, and access the numeric keypad overlay.

**software:** The set of programs, procedures and related documentation associated with a computer system. Specifically refers to computer programs that direct and control the computer system's activities. See also hardware.

**stop bit:** One or more bits of a byte that follow the transmitted character or group codes in asynchronous serial communications.

**system disk:** A diskette that contains the operating system files needed to start the computer. Any diskette can be formatted as a system disk. A system disk is also called a "bootable disk", "boot disk" or a "startup disk." Compare non-system disk.

# T:

**terminal:** A typewriter-like keyboard and CRT display screen connected to the computer for data input/output.

**TFT display:** A liquid crystal display (LCD) made from an array of liquid crystal cells using active-matrix technology with thin film transistor (TFT) to drive each cell.

**Touch Pad:** A pointing device integrated into the TOSHIBA computer palm rest.

# U:

**USB:** Universal Serial Bus. This serial interface lets you communicate with several devices connected in a chain to a single port on the computer.

# V:

**VGA:** Video Graphics Array is an industry standard video adaptor that lets you run any popular software.

**volatile memory:** Random access memory (RAM) that stores information as long as power is supplied to the computer.

# W:

**warm start:** Restarting or resetting a computer without turning it off.

**Wi-Fi®:** A registered trademark term of the Wi-Fi Alliance that stands for Wireless Fidelity, and is another term for the communication protocol to permit an Ethernet connection using wireless communication components.

**window:** A portion of the screen that can display its own application, document or dialog box. Often used to mean a Microsoft Windows window.

**Wireless LAN:** Local Area Network (LAN) through wireless communication.

**Wireless WAN:** Wide Area Network (WAN) through wireless communication.

**write protection:** A method for protecting a floppy diskette from accidental erasure.

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